OBJECTIVES FOR THE QUALIFYING EXAMINATION

Third Edition

INTRODUCTION

The Medical Council of Canada (MCC) is pleased to publish a third edition of its examination Objectives, which will serve as the basis for the MCC Evaluating Examination and Qualifying Examination Part I and Part II.

These Objectives do not define a medical curriculum and should be used to identify the domains of cognitive and clinical skills evaluated by this national examination.

The development of these Objectives began with a Task Force on Objectives in the 1980's. Council accepted them in 1988.

From 1989 to 1992, the late Dr. Louis Levasseur, Chair of the Board of Examiners and Dr. J.S. Baumber, then as Chair of the Education Committee, and a group of co-authors from the University of Calgary, were involved in upgrading the examination and the development of the first edition of the Objectives.

The second edition was the result of revisions undertaken by a Task Force in 1997-98. That included a revision of MCC Clinical Objectives and the Working Group on Legal, Ethical and Organizational Aspects of Practice, a new section. The products of the two tasks were integrated into the second edition by Dr. Henry Mandin of Calgary, with the editing work of the late Dr. Bernard Lefebvre of Ottawa and Mme Mireille Lanctôt-Gagnon of Montreal. Both sets of Objectives serve to guide our test committees in developing our test materials and in blueprinting all of the Council's examinations.

Now in 2003, we publish the third edition, following a major collaborative effort involving the faculties of medicine, public members of Council, panels of practicing physicians, all headed by Dr. Mandin. However, this edition will be web based, with better indexing, making for easier use. Dr. David E. Blackmore, Director of Evaluation at the MCC, oversaw the latter development.

Based on these Objectives, the Examinations of the MCC serve to evaluate basic cognitive, reasoning skills and clinical aptitudes to be required of all physicians entering medical practice in Canada. Once a candidate successfully completes the MCCQE Part I and Part II, the physician is awarded the Licentiate of the Medical Council of Canada (LMCC) and that physician's name is entered on the Canadian Medical Register.

W. D. Dauphinee
October 2003

PREFACE

Like the preceding two editions, the current edition represents a 'work in progress'. Although several significant steps beyond the 1999 edition of these objectives have been accomplished, it is a certainty that the next edition will provide additional improvements. Perhaps since perfection may never be attained, it is more advantageous that each edition be an advance on the previous one. The most obvious advance for the third edition is its web format. We hope that this format will enable readers to locate the required set of objectives with greater ease.

One of the recommendations made by physicians from across Canada who reviewed the second edition was to translate and apply the generic objectives in the Legal, Ethical and Organizational domains of medicine to actual clinical situations. In the current edition, we selected a number of appropriate clinical presentations and after referring to the generic Legal, Ethical, and Organizational objective, applied these to the specific presentation. No attempt was made to translate all of the generic objectives to all of the clinical presentations. It was considered desirable to provide a number of examples without attempting to be comprehensive. Depending on our readers' comments, this process of translation and application may be extended for the next edition.

The Third Edition includes a new section, **Applied Scientific Concepts**. In the belief that a true understanding of clinical situations requires in many instances the application of scientific concepts that underpin clinical medicine, an attempt was made to identify such concepts. These concepts are included in the hope that they will assist candidates with their comprehension of the various clinical presentations. Since this is a first attempt, the list of concepts provided remains incomplete. If readers indicate that this listing of scientific concepts is valuable, a concerted effort will be made to ensure a more comprehensive list with the next edition. Most important, this section is *not* included for the purpose of creating a separate set of examination questions, but rather to make the reader aware of some of the Applied Scientific Concepts that are relevant to a given clinical presentation.

Those readers who count the number of clinical presentations in the current edition may be surprised to discover that the number appears to have contracted. What is being observed is not a contraction but a re-organization of the clinical presentations. The actual number remains stable. The human body continues to react to an infinite number of insults in a finite number of ways, and the present edition, by identifying all of these ways, continues to define the domain of medical knowledge in a comprehensive manner. We have again listed all of the clinical presentations alphabetically. The Table of Contents is organized by clinical presentation, but the search engine should provide the best assistance.

The objectives have been updated, extended, and the format used for each presentation has been changed in a minor fashion. The first category displayed now is **Rationale**. The **Rationale** provides an overview of why facets of the problem are critical for the competent physician by highlighting fundamental, vital issues. The **Causal Conditions** or **Diseases** leading to the clinical presentation are the next category. The manner in which the conditions are organized was carefully considered, and in so far as possible a logical scheme was selected. The third category is **Key Objective(s)**. The **Key Objective(s)** proposes to emphasize the one or two elements of the clinical presentation that are essential to the successful management of the problem. The fourth and last category, the **Objectives**, is intended to stress those elements of the data gathering, diagnostic process and management that are central to the specific presentation.

Although no attempt has been made to identify those *Clinical* objectives that might be best evaluated in either Part I or Part II of the Medical Council of Canada Qualifying Examination, the *Legal, Ethical, and Organizational* objectives have been identified in such a manner. Some are clearly identified as belonging in Part I, and all are

subject to evaluation in Part II. This separation was completed in recognition of the fact that some of the legal, ethical, and organizational objectives are learned best during graduate clinical education. As before, some of the objectives that emphasize management also are likely to be achieved after a period of post-graduate clinical experience. Such objectives are evaluated more appropriately in Part II of the examination.

The objectives have been defined in behavioral terms, and are intended to reflect our expectations of competent physicians in the supervised practice of medicine. They are written for those who have the task of writing evaluation questions for the purpose of certifying basic medical competence as well as for candidates being examined. The authors gave careful consideration to the choice and meaning of verbs used to define the behaviors expected within the various objectives.

The assumption has been made that it is better to prevent than treat, and that rational treatment is possible only after a diagnosis has been established. The **Objectives** deal with data gathering, diagnostic clinical problem solving, and the principles of management which are applicable, in part or in whole, to clinical situations faced by physicians. The section of **Population Health and Its Determinants**, has been separated into a clinical presentation relevant to the practice of medicine that addresses the needs of populations rather than individuals. The **Pediatric Objectives** stress health maintenance and disease prevention through an understanding of the complexity of the process of growth and maturation from infancy to adulthood. Physicians caring for children become their advocates at all interfaces of the child with society and must work comfortably with many other health professionals to achieve these goals. There are, however, many childhood diseases that present unique challenges to the physician in terms of diagnosis and management. Where appropriate, selected clinical presentations have been separated into adult and pediatric sections.

In addition to the remarkable contribution made by the authors of this Third Edition, I am most appreciative of the comments and suggestions made by many physicians from across Canada, the representatives of 12 licensing authorities and the two national certifying bodies, as well as, the Associate Deans and faculty members of all sixteen medical schools. Finally, I must acknowledge the many hours and dedication of Ms. Natalie Auger in the preparation of the numerous drafts and final manuscript. Without her help and skills, this task would have been impossible.

Henry Mandin, MD, FRCPC, DSc (Hon)
Medical Council of Canada and
University of Calgary, Faculty of Medicine
2003

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000
November 2004

General Objectives

Rationale

An appropriate history-taking and physical examination are essential for the candidate's identification of the clinical presentation, derivation of possible diagnoses, and rational plans for investigation and management. Frequently, the social, cultural and behavioral characteristics of the patient may make it challenging to obtain the clinical data (e.g., language, altered mental status). However, the candidate must be able to implement timely and appropriate plans for investigation and management based on the information obtained.

Objectives

Faced by a patient with a clinical problem, candidates will:

- Obtain pertinent information about the patient.
- Perform an appropriate physical examination.
- Order relevant investigations.
- Arrive at a reasonable diagnosis(es).
- Formulate management plans for short and long term care.

Communication Skills

Competent candidates will communicate effectively with patients, families, and other relevant persons by:

- Demonstrating a compassionate interest, respect, and understanding of the patient as an individual, while maintaining a professional relationship.
- Listening and interpreting information.
- Eliciting the concerns of the patient using non-directive (open-ended) and directive (closed-ended) questions, paraphrasing and summarizing when appropriate.
- Evaluating information gained from non-verbal communication.
- Describing the effect of their own affective response on the doctor/patient relationship.
- Demonstrating non-judgmental behavior.
- Outlining the socio-cultural and individual influences that affect the doctor/patient relationship, such as:
  - sex role and gender identity of both the physician and patient
  - socio-cultural and religious differences
  - lifestyle
- Demonstrating ways of dealing effectively with difficult situations (e.g., excessively talkative and rambling, reticent, excessively quiet, crying, hostile and/or angry patients.
- Demonstrating ways of dealing effectively with the mentally and physically disabled patient.
- Eliciting and interpreting the anxieties related to embarrassment, fear of disease and confidentiality.
- Discussing sensitive issues such as sexual dysfunction, family dysfunction (including marital dysfunction), homicidal and suicidal risks.
- Discussing the emotional effects of physiological events.
- Demonstrating emotional and social support to gain confidence and cooperation.
- Evaluating the interaction between members of a family where appropriate.
- Discussing information at the appropriate intellectual level for all ages and conditions.

History

Competent candidates will:

- Elicit and interpret pertinent events from the patient, family or other sources.
- Demonstrate the ability to modify their history according to the severity and urgency of the problem at hand.
- Demonstrate the ability to record and/or summarize information in a timely manner.
- Provide a clear definition of the patient's problems upon which to base further investigation, diagnosis and ongoing management

Physical Examination

Competent candidates will:

- Perform a physical examination appropriate to the age of the patient and nature of the clinical problem(s) presented.
- Elicit and interpret information through continuous observation.
- Demonstrate the ability to record and/or summarize information in a timely manner.
- Provide a clear definition of the patient's problems upon which to base further investigation, diagnosis and ongoing management.

Investigations

Competent candidates will:

- Select and interpret appropriate laboratory and other diagnostic procedures that confirm the diagnosis; exclude other important diagnoses or determine the degree of dysfunction.
- Discuss the limitations and contraindications of common investigations.
- Determine the reliability and predictive value of common investigations.
- State the effect of demographic considerations on the sensitivity and specificity of diagnostic tests.
- Demonstrate ways to deal effectively with unexpected findings, ill-defined results or normal variance not indicative of disease.
- Outline the physiological, biochemical and pathological principles of common investigations.
- Perform common procedures using the appropriate instruments and materials.
- Describe any discomfort, harm or inconvenience to the patient associated with the investigations they have selected.

Clinical Judgement And Decision-Making

Competent candidates will:

- Differentiate between important and spurious information.
- Interpret pertinent data in order to:
  - list and prioritize a differential diagnosis for common clinical problems
  - diagnose specific common diseases
  - diagnose more rare, but life threatening diseases
- Differentiate among acute emergency situations, acute exacerbations of chronic illnesses and serious but non-emergency situations.
- List the indications for specialized care and/or consultation.
- Discuss pertinent information with other members of the health care team including consultants.
- Evaluate critically, their own professional competencies and determine their personal learning needs.

Management Skills

Competent candidates will:

- Outline the initial management for both common and more rare but life-threatening conditions.
- Determine the importance of time and place in determining appropriate management.
- Evaluate the response to therapy and other management.
- State the pharmacologic effects, the clinical application including indications, contraindications, major side effects and interactions of commonly used drugs.
- Discuss the diagnosis, treatment plan and prognosis with the patient, family and other concerned individuals, where appropriate.
- Outline the contribution and expertise of other health care professionals and community agencies.
- Select the appropriate multidisciplinary teams for the optimal care of patients.
- Select psychological methods of treatment where appropriate.

Health Promotion And Maintenance

Competent candidates will:

- Formulate preventive measures into their management strategies.
- Communicate with the patient, the patient's family and concerned others with regard to risk factors and their modification where appropriate.
- Describe programs for the promotion of health including screening for, and the prevention of, illness.
- Describe the concept of illness behaviour and its influence on health care.

Critical Appraisal/Medical Economics

Competent candidates will:

- Evaluate medical evidence in both clinical and academic situations.
- Evaluate scientific literature in order to critically assess the benefits and risks of current and proposed methods of investigation, treatment and prevention of illness.
- Demonstrate the use of the computer for appropriate data retrieval and function.
- Define the socio-economic rationales, implications and consequences of medical care.
- Outline the principles of cost containment, cost benefit analysis and cost effectiveness.

Law and Ethics

Competent candidates will:

- Discuss the principles of law, biomedical ethics and other social aspects related to common practice situations.

1
September 2012

Abdominal Distension

Rationale

Abdominal distension may indicate the presence of serious intra-abdominal or systemic disease, but it is also a common symptom of benign disease, such as irritable bowel syndrome.

Causal Conditions

1. Ascites
   a. Exudative: Low serum-to-ascites albumin gradient (e.g., peritoneal carcinomatosis)
   b. Transudative: High serum-to-ascites albumin gradient (e.g., portal hypertension)
2. Bowel dilatation
   a. Mechanical obstruction (e.g., adhesions, volvulus)
   b. Paralytic (e.g., toxic megacolon, neuropathy)
3. Other
   a. Abdominal mass
   b. Irritable bowel syndrome
   c. Organomegaly (e.g., hepatomegaly)
   d. Pelvic mass (e.g., ovarian cancer) (see ABDOMINAL MASS)

Key Objectives

Given a patient with abdominal distension, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should be able to differentiate ascites from bowel obstruction.

Enabling Objectives

Given a patient with abdominal distention, the candidate will

1. list and interpret critical clinical findings, including
   a. perform an appropriate history and physical examination to differentiate ascites from distended bowel or mass;
   b. identify the underlying cause of the ascites or bowel distention (e.g., cirrhosis, colon cancer);
2. list and interpret critical investigations, including
   a. laboratory investigations and imaging (e.g., liver enzymes, abdominal imaging including three views of the abdomen, ultrasound; paracentesis);
3. construct an effective plan of management, including
   a. initiate specific therapy in case of ascites (e.g., dietary, therapeutic paracentesis);
   b. initiate specific therapy in case of mechanical or paralytic bowel obstruction;
   c. determine if the patient requires specialized care.

2
June 2010

Abdominal / Pelvic Mass

Rationale

Abdominal or pelvic masses may be found on physical examination or incidentally on imaging. It is important to determine which masses require immediate investigation or can be safely monitored.

Causal Conditions

1. Organomegaly
   a. Hepatomegaly
   b. Splenomegaly
   c. Enlarged kidneys (e.g., cysts, hydronephrosis)
2. Neoplasms (benign/malignant)
   a. Lymphoma/Sarcoma
   b. Gastrointestinal tumors (e.g., gastric, colon, pancreas, hepatoma, gastrointestinal stromal tumor)
   c. Gynecologic tumors (e.g., ovarian, uterine)
   d. Renal/adrenal
   e. Neuroblastoma
3. Gynecologic
   a. Ovary (e.g., benign or malignant)
   b. Tube (e.g., ectopic pregnancy)
   c. Uterus (e.g., leiomyoma, pregnancy)
4. Bladder/prostate (e.g., urinary retention, cancer)
5. Other
   a. Pancreatic pseudocyst
   b. Vascular (abdominal aortic aneurysm)
   c. Abdominal wall masses

Key Objectives

Given a patient with an abdominal or a pelvic mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should recognize those features of a mass that indicate the need for immediate intervention.

Enabling Objectives

Given a patient with an abdominal or a pelvic mass, the candidate will

1. list and interpret critical clinical findings, including
   a. identify systemic symptoms and signs related to the mass (e.g., weight loss, hypertension, menstrual irregularity);
   b. perform an appropriate physical examination to determine the likely cause of the mass;
2. list and interpret critical investigations, including
   a. laboratory and imaging tests (e.g., ultrasonography, computed tomography abdomen/pelvis scan, tumor markers);

3. construct an effective initial management plan, including
   a. determine whether the patient requires immediate intervention or referral for specialized care (e.g., abdominal aortic aneurysm);
   b. determine if the patient requires serial monitoring (e.g., renal cyst).

2-1
November 2004

Adrenal Mass

This Objective is no longer applicable. Please use 2 ABDOMINAL / PELVIC MASS

2-2
November 2009

Hepatomegaly

Rationale

Hepatomegaly, enlargement of the liver, is an uncommon clinical presentation, but is important to recognize in light of potentially serious causal conditions. This may present as an incidental finding on physical examination or following investigations.

Causal Conditions

1. Congestive (e.g., right heart failure)
2. Infiltrative
   a. Malignant
   b. Nonmalignant
3. Proliferative
   a. Infectious
   b. Inflammatory

Key Objectives

Particular attention should be paid to the physical examination of the liver.

Enabling Objectives

The candidate will perform an appropriate physical examination to determine if the patient has hepatomegaly.

Given a patient with hepatomegaly, the candidate will

1. list and interpret critical clinical findings, including
   a. history or physical findings of right heart failure, infection, malignancy, chronic liver disease, biliary disease;
2. list and interpret critical investigations, including
   a. laboratory investigations;
   b. diagnostic imagining;
3. construct an effective initial management plan, including
   a. select patients in need of urgent (especially surgical) or specialized care;
   b. determine need and type of ongoing care (e.g., dietary counseling).

2-3
November 2009

Splenomegaly

Rationale

Splenomegaly, an enlarged spleen, is relatively uncommon. However, it is often associated with serious underlying pathology. This may present as an incidental finding on physical examination or following investigations.

Causal Conditions

1. Congestive (e.g., cirrhosis)
2. Infiltrative
   a. Malignant
   b. Nonmalignant
3. Proliferative
   a. Infectious
   b. Inflammatory
   c. Other hematologic conditions

Key Objectives

Particular attention should be paid to the physical examination of the spleen.

Enabling Objectives

The candidate will perform an appropriate physical examination to determine if the patient has splenomegaly.

Given a patient with splenomegaly, the candidate will

1. list and interpret critical clinical findings, including
   a. history or physical findings suggestive of liver disease, hematologic disease, infection, malignancy;
2. list and interpret critical investigations, including
   a. laboratory investigations;
   b. diagnostic imaging;
3. construct an effective management plan, including select patients in need of urgent (especially surgical) or specialized care.

2-4
November 2009

Hernia (Abdominal Wall and Groin)

Rationale

A hernia is an abnormal protrusion of part of a viscus through its containing wall. Hernias, in particular inguinal hernias, are very common, and thus, herniorrhaphy is a common surgical intervention.

Causal Conditions

1. Congenital hernia
   a. Infantile inguinal hernia
   b. Umbilical
2. Acquired hernia
   a. Inguinal hernia
      i. Indirect
      ii. Direct
   b. Femoral hernia
   c. Umbilical hernia
   d. Ventral (incisional) hernia

Key Objectives

Particular attention should be paid to the physical examination and identification of the type of hernia. Non-reducible (incarcerated) hernia are at increased risk for strangulation and requires emergent, rather than elective, repair.

Enabling Objectives

Given a patient with a hernia, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate the various types of hernias on the basis of physical exam;
   b. differentiate hernias from other causes of a groin masses;
   c. identify hernias needing emergent surgical repair;
2. list and interpret critical investigations of a patient who may have strangulation, ischemia, or bowel obstruction;
3. construct an effective management plan, including
   a. select patients in need of surgical consultation;
   b. counsel and educate patients on the risks associated with uncorrected hernias as well as strategies to reduce post-operative recurrence (especially with ventral hernias).

3

Abdominal Pain

Please see Abdominal Pain (Children) 3-1
or Acute Abdominal Pain 3-2
or Chronic Abdominal Pain 3-3
or Anorectal Pain 3-4

3-1
November 2013

Abdominal Pain (Children)

Rationale

Abdominal pain is a common complaint in children. While the symptoms may result from serious abdominal pathology, in a large proportion of cases, an identifiable organic cause is not found. The causes are often age dependent.

Causal Conditions

1. Lower abdominal
   a. Appendicitis
   b. Constipation
   c. Gastroenteritis
   d. Mesenteric lymphadenitis
   e. Inflammatory bowel disease
   f. Inguinal hernia (incarcerated)
   g. Urinary tract infection
   h. Gynecological cause in pubertal children
2. Generalized pain
   a. Peritoneal inflammation
   b. Bowel
      i. Infantile colic
      ii. Obstruction
   c. Malabsorption
   d. Irritable bowel syndrome
3. Flank pain
   a. Pyelonephritis
   b. Kidney stones
4. Periumbilical recurrent abdominal pain
5. Epigastric pain
   a. Gastroesophageal reflux
   b. Peptic ulcer
   c. Biliary tract disease
   d. Pancreatitis

Key Objectives

In particular, the candidate will distinguish those patients requiring emergency medical and/or surgical treatment, recognizing that a non-organic cause is the most common etiology for the symptoms.

Enabling Objectives

Given a pediatric patient with abdominal pain, the candidate will

1. list and interpret critical findings, including those derived from
   a. a. the identification of causes of abdominal pain requiring surgery (this requires particular attention to a thorough physical examination aimed at findings suggestive of peritonitis);
   b. b. the differentiation of all possible psychological causes in case of chronic abdominal pain;
   c. c. the differentiation between organic pain and infantile colic;
2. list and interpret critical investigations, including
   a. laboratory investigations and diagnostic imaging;
3. construct an effective initial management plan, including
   a. determining whether emergency surgical or medical care is required;
   b. outlining the initial plan of management in case of acute intestinal obstruction;
   c. outlining a plan of management for common causes of abdominal pain based on age;
   d. determining whether specialized care and/or further investigations are required.

3-2
November 2009

Acute Abdominal Pain

Rationale

Acute abdominal pain is a common complaint in adults, leading to frequent physician visits both in the Emergency Department and office setting. Acute abdominal pain may result from serious intra-abdominal, intrathoracic, or retroperitoneal processes.

Causal Conditions

1. Localized pain
   a. Upper abdominal region
      i. Biliary tract disease
      ii. Pancreatitis
      iii. Peptic ulcer disease, gastritis
      iv. Gastroesophageal reflux disease
      v. Acute hepatitis, hepatic abscess
      vi. Splenic infarct, splenic abscess
      vii. Referred cardiothoracic pain
      viii. Musculoskeletal pain
   b. Lower abdominal region
      i. Appendicitis
      ii. Mesenteric lymphadenitis
      iii. Diverticulitis
      iv. Incarcerated hernia
      v. Pelvic inflammatory disease
      vi. Ectopic pregnancy
      vii. Ovarian (e.g., torsion or ruptured cyst)
      viii. Urinary tract infection
      ix. Renal colic
      x. Inflammatory bowel disease
      xi. Bowel obstruction
2. Diffuse pain
   a. Generalized peritonitis
   b. Ruptured abdominal aortic aneurysm
   c. Ischemic bowel disease
   d. Gastroenteritis
   e. Irritable bowel syndrome

Key Objectives

Given a patient with acute abdominal pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify those patients requiring emergency medical or surgical treatment.

Enabling Objectives

Given a patient with acute abdominal pain, the candidate will

1. list and interpret critical clinical findings, including
   a. historical features
      i. the onset, frequency, duration, location, radiation, quality, and severity of pain;
      ii. identify aggravating and alleviating factors;
   b. appropriate physical examination
      i. recognize features of peritonitis;
      ii. perform rectal and genitourinary examinations when appropriate;
2. list and interpret the critical investigations, including
   a. order and interpret appropriate laboratory and diagnostic imaging;
3. construct an effective management plan, including
   a. select patients that require emergency surgery or emergency medical care;
   b. outline a plan of management for non-emergency conditions;
   c. select patients in need of specialized care and/or further investigation.

3-3
November 2009

Chronic Abdominal Pain

Rationale

Chronic or recurrent abdominal pain is a common symptom with an extensive differential diagnosis and heterogeneous pathophysiology. The history and physical examination frequently differentiate amongst the causative disorders.

Causal Conditions

1. Upper abdominal region
   a. Gastric cancer
   b. Ulcer and non-ulcer dyspepsia (e.g., heartburn)
   c. Biliary disease
   d. Pancreatic disease
   e. Hepatic disease
   f. Referred cardiothoracic pain
2. Lower abdominal region
   a. Bowel disease
      i. Inflammatory bowel disease
      ii. Diverticular disease
      iii. Irritable bowel syndrome
   b. Genitourinary disease
      i. Endometriosis
      ii. Benign or malignant tumors
      iii. Urinary tract disease
      iv. Pelvic inflammatory disease

Key Objectives

Given a patient with chronic abdominal pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with chronic abdominal pain, the candidate will

1. list and interpret critical clinical findings, including
   a. a detailed history and appropriate physical examination;
2. list and interpret critical investigations, including
   a. laboratory investigations, advanced imaging, and endoscopic evaluation;
3. construct an effective initial management plan, including
   a. appropriate medical, surgical, and non-pharmacologic management;
   b. recognition of situations where patients need long-term follow-up due to risk of later complications (e.g., Barrett's esophagitis).

3-4
June 2011

Anorectal Pain

Rationale

Most causes of anal pain are treatable, and early identification and treatment will reduce morbidity.

Causal Conditions

1. Anorectal disease
   a. Inflammatory bowel disease
   b. Fissures, fistulas
   c. Hemorrhoids
2. Dermatologic disease
   a. Psoriasis
   b. Contact dermatitis or atopic dermatitis
3. Malignancy (dermatologic or other)
4. Infections
   a. Sexually transmitted
   b. Bacterial, fungal, or parasitic
5. Trauma
6. Coccygeal pain

Key Objectives

Given a patient with anorectal pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will inquire about risk factors or symptoms suggestive of underlying disease.

Enabling Objectives

Given a patient with anorectal pain, the candidate will

1. list and interpret critical clinical findings, including
   a. history of rectal pain and bleeding, disturbed bowel function, and anal trauma;
   b. results of an appropriate examination, including digital rectal examination;
2. list and interpret critical investigations, including
   a. laboratory investigations;
   b. endoscopic examination;
3. construct an effective initial management plan, including
   a. determine whether the patient requires urgent surgical treatment;
   b. counsel the patient about conservative treatment options in case of hemorrhoids and anal fissures;
   c. refer the patient for specialized care, if necessary.

4
November 2013

Allergic Reactions and Atopy

Rationale

Allergic conditions are common and may be life-threatening. Many patients may have multiple manifestations of an atopic disorder.

Causal Conditions

Allergic reactions may be present with the following clinical manifestations:

1. Anaphylaxis
   a. Drugs, food allergens, insect stings, idiopathic
2. Urticaria or angioedema
   a. Drugs, food, physical stressors (e.g., cold, exercise) or congenital causes
3. Atopic dermatitis
4. Respiratory allergy (e.g., pollen, dust mites)

Key Objectives

Given a patient with an allergic reaction, the candidate will determine the cause and severity, and will initiate an appropriate management plan. Particular attention should be paid to findings suggestive of anaphylaxis and its management.

Enabling Objectives

Given a patient with an allergic reaction, the candidate will

1. list and interpret critical clinical findings, including
   a. history of drug ingestion, food ingestion, stings, environmental and occupational exposures, exercise, or family history;
   b. results of an appropriate physical examination;
2. list and interpret critical investigations, including
   a. appropriate use of tests designed to identify allergens;
3. construct an effective management plan, including
   a. emergency management of anaphylaxis with appropriate measures;
   b. long-term management including patient education counseling (e.g., reassignment or removal from work, avoidance of triggers).

5
November 2013

Attention, Learning, and School Problems

Rationale

School and learning problems are among the most common reasons for children to present to primary care clinicians. Difficulties at school can be caused by treatable medical and developmental conditions which, if unaddressed, can lead to long-term psychosocial dysfunction and chronic health problems.

Causal Conditions

1. Developmental disorders (e.g., attention deficit hyperactivity disorder [ADHD], specific learning disorder, autism spectrum disorder)
2. Sensory impairment (e.g., hearing or vision impairment)
3. Neurological disorders (e.g., seizure disorder, fetal alcohol spectrum disorder)
4. Mental health disorders
5. Psychosocial stressors (e.g., hunger, adverse childhood experience)
6. Chronic medical disease (e.g., obstructive sleep apnea)
7. Substance abuse-related and addictive disorders

Key Objectives

Given a child or youth with learning or school problems, the candidate will assess for potential causal conditions, which often co-occur, and will initiate an appropriate management plan. Particular emphasis should be placed on early involvement of interdisciplinary resources and longitudinal supportive care.

Enabling Objectives

Given a child or youth with learning or school problems, the candidate will

1. list and interpret critical clinical findings, including those derived from
   a. a thorough medical and developmental history, with a focus on potential causal conditions;
   b. an educational history from school staff;
   c. a physical examination, with particular attention to signs of neurologic or genetic causal conditions;
2. list and interpret critical investigations, including
   a. systematic hearing and vision screening;
   b. relevant laboratory tests (e.g., thyrotrophin-stimulating hormone, lead level);
   c. psychological (cognitive) testing or behavioral checklists (e.g., ADHD screening tools);
3. construct an effective management plan, including
   a. supporting family advocacy for academic and/or behavioral interventions at school;
   b. referring for interdisciplinary intervention, if necesary (e.g., behavior management);
   c. ensuring medical management of causal conditions when required (e.g., long-acting stimulant medications);
   d. providing counseling and longitudinal family support;
   e. referring for specialized care, if necessary.

6
September 2009

Blood From Gastrointestinal Tract

This Objective is no longer applicable. Please use Upper Gastrointestinal Bleeding 6-1 or Lower Gastrointestinal Bleeding 6-2

6-1
November 2009

Upper Gastrointestinal Bleeding

Rationale

Upper gastrointestinal bleeding can manifest either as hematemesis or melena. It always warrants careful and urgent evaluation, investigation, and treatment. The management depends on the amount of blood loss, the likely cause of the bleeding, and the underlying health of the patient.

Causal Conditions

1. Ulcerative or erosive processes
   a. Peptic ulcer disease
   b. Esophagitis
   c. Gastritis
2. Portal hypertension
3. Trauma (e.g., Mallory-Weiss tear)
4. Tumors

Key Objectives

Given a patient with hematemesis or melena, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine and manage the hemodynamic status of the patient and resuscitate if necessary.

Enabling Objectives

Given a patient with upper gastrointestinal bleeding, the candidate will

1. list and interpret critical clinical findings, including
   a. history to determine the cause of the bleeding;
   b. appropriate physical examination including the assessment of hemodynamic stability;
   c. indications of a high likelihood of re-bleeding;
2. list and interpret critical clinical investigations, including
   a. endoscopy;
   b. laboratory and diagnostic imaging as appropriate;
3. construct an effective management plan, including
   a. resuscitation of the hemodynamically unstable patient;
   b. medical treatment as appropriate;
   c. employment of endoscopic procedures as needed;
   d. selection of patients in need of immediate specialized care (gastroenterology, general surgery, or intensive care unit).

6-2
November 2009

Lower Gastrointestinal Bleeding

Rationale

Lower gastrointestinal bleeding is defined as blood originating distal to the ligament of Treitz. It can present as frank bleeding (hematochezia) or as occult blood loss. Although commonly seen in benign conditions, it may be the first presentation of malignancy.

Causal Conditions

1. Colorectal cancer or polyps
2. Diverticulosis
3. Angiodysplasia
4. Anorectal disease
5. Enterocolitis
6. Brisk bleeding from the upper gastrointestinal tract
7. Rectal trauma

Key Objectives

Particular attention should be given to the hemodynamic status of the patient and the need for immediate specialized care. The candidate should also identify patients at high risk of colorectal cancer for screening colonoscopy.

Enabling Objectives

Given a patient with lower gastrointestinal tract bleeding, the candidate will

1. list and interpret critical clinical findings, including
   a. assess through history and physical examination, including a rectal examination as part of the initial assessment;
   b. assess the hemodynamic status;
2. list and interpret critical clinical investigations, including
   a. perform colonoscopy as appropriate;
   b. select additional investigations as appropriate;
3. construct an effective initial management plan, including
   a. identify patients in need of immediate resuscitation and referral for specialized care.

7
June 2010

Blood in Sputum (Hemoptysis)

Rationale

Expectoration of blood can range from blood streaking of sputum to massive hemoptysis (greater than 200 ml/d) that may be acutely life-threatening. Bleeding usually starts and stops unpredictably, but under certain circumstances may require immediate establishment of an airway and control of the bleeding.

Causal Conditions

1. Airway disease
   a. Inflammatory (e.g., bronchiectasis, bronchitis)
   b. Neoplasms (e.g., bronchogenic carcinoma)
   c. Other (e.g., foreign body, trauma)
2. Pulmonary parenchymal disease
   a. Infectious (e.g., tuberculosis, necrotizing pneumonia)
   b. Inflammatory/Immune (e.g., vasculitis)
   c. Other (e.g., coagulopathy)
3. Cardiac/Vascular
   a. Pulmonary embolus with infarction
   b. Elevated capillary pressure (e.g., mitral stenosis, left ventricular failure)
   c. Arteriovenous malformation

Key Objectives

Given a patient with hemoptysis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate must determine if the patient requires urgent intervention and stabilization, or if he needs further investigation to rule out serious underlying disease.

Enabling Objectives

Given a patient with hemoptysis, the candidate will

1. list and interpret critical clinical findings, including
   a. identify potential risk factors for causes of hemoptysis (e.g, smoking, asbestos exposure, anti-coagulants);
   b. perform an appropriate history and physical examination to determine the stability of the patient and the underlying cause;
2. list and interpret critical investigations, including
   a. chest X-ray and other imaging, including computed chest tomography;
   b. complete blood count and coagulation screen;
   c. tests for systemic disease;
3. construct an effective initial plan of management, including
   a. resuscitate and stabilize a patient with massive hemoptysis;
   b. outline the treatment of causes that are not life-threatening and do not require immediate referral to a specialist;

c. determine if the patient requires specialized care.

8
November 2013

Blood in Urine / Hematuria

Rationale

Hematuria can be gross or microscopic. Although gross hematuria is often caused by a significant underlying pathology, both microscopic and gross hematuria require investigation.

Causal Conditions

1. Renal
   a. Glomerular disease (e.g. systemic lupus erythematosus, hemolytic uremic syndrome, vasculitis)
   b. Non-glomerular (e.g. Acute interstitial nephritis, renal tumor, exercise)
2. Post renal (e.g. stones, bladder tumor, benign prostatic hyperplasia, cystitis)
3. Hematologic (e.g coagulopathy, sickle hemoglobinopathy)

Key Objectives

Interpret a urinalysis, paying attention to differentiating glomerular from non-glomerular causes and construct an initial management plan.

Enabling Objectives

Given a patient with hematuria, the candidate will

1. list and interpret clinical findings, including results of a detailed history and of an appropriate physical examination;
2. list and interpret investigations, including a urinalysis as well as further laboratory and imaging studies, as appropriate;
3. construct an appropriate initial management plan, including appropriate follow up and referral for specialized procedures, as required (e.g., renal biopsy, cystoscopy).

9

Blood Pressure, Abnormal

Please see Hypertension 9-1
or Hypertension in Childhood 9-1-1
or Hypertensive Disorders of Pregnancy 9-1-4
or Hypotension, Shock 9-2

9-1
November 2013

Hypertension

Rationale

Hypertension is a common condition that presents with elevation in either systolic or diastolic blood pressure, and represents a major risk factor for morbidity and mortality in Canada. In some cases, it can represent a medical emergency with life-threatening consequences. Appropriate investigation and management of hypertension is expected to improve health outcomes.

Causal Conditions

1. Primary
2. Secondary
   a. Renal parenchymal disease (e.g., kidney injury, polycystic kidney disease)
   b. Metabolic or endocrine (e.g., adrenal adenoma/hyperplasia, thyroid)
   c. Vascular (e.g., unilateral renal artery stenosis, coarctation of the aorta)
   d. Catecholamine excess (e.g., pheochromocytoma, drugs)
   e. Obstructive sleep apnea

Key Objectives

Given a patient with hypertension, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to other cardiac risk factors, existing target organ damage and the identification of patients with hypertensive urgencies and emergencies.

Enabling Objectives

Given a patient with hypertension, the candidate will

1. list and interpret key clinical findings, including
   a. accurate measurements taken to appropriately assess blood pressure, correctly diagnose hypertension, and determine its severity;
   b. results of an appropriate history and physical examination aimed at eliciting risk factors, evidence of acute and chronic target organ damage and secondary causes;
2. list and interpret critical investigations, including
   a. baseline investigations (e.g., creatinine, electrolytes, urinalysis);
   b. tests for risk factors (e.g., fasting lipids and glucose);
   c. tests for secondary causes, where indicated (e.g., urinary catecholamines, thyroid-stimulating hormone);
   d. tests for end organ damage (microalbuminuria, electrocardiography);
3. construct an effective initial management plan, including
   a. recommending non-pharmacological management strategies (e.g., sodium reduction, weight loss, stress reduction);
   b. selecting appropriate anti-hypertensive medication taking into consideration concomitant conditions (e.g., diabetes mellitus, asthma);

c. selecting appropriate anti-hypertensive medication, dose, and dosage schedule taking into consideration individual characteristics (e.g., elderly), compliance, and potential for adverse reactions;
d. selecting appropriate parenteral agents for hypertensive emergencies and ensure appropriate titration and monitoring.

9-1-1
June 2010

Hypertension in Childhood

Rationale

Hypertension, although uncommon in children, is usually due to an identifiable secondary cause. Essential hypertension is more common in adolescence.

Causal Conditions

1. Neonates and young infants
   a. Renal artery thrombosis after umbilical artery (UA) catheter
   b. Coarctation of the aorta
   c. Congenital renal disease
   d. Renal artery stenosis
2. Children aged 1-10 year
   a. Renal disease
   b. Coarctation of the aorta
3. Over 10 years of age
   a. Essential hypertension
   b. Renal disease
   c. As with 1-10 years (less common)

Key Objectives

Given a child with hypertension, the candidate will diagnose the cause, severity and associated complications, and will initiate an appropriate management plan. Particular attention should be paid to distinguishing primary from secondary hypertension.

Enabling Objectives

Given a child with hypertension, the candidate will

1. list and interpret critical clinical findings, including
   a. accurate measurement of hypertension, and classification using blood pressure tables for children;
   b. signs of secondary hypertension (e.g., coarctation of the aorta, renal disease)
   c. obtain height, weight, body mass index, and relevant family history;
   d. diagnose renal parenchymal disease;
2. list and interpret critical investigations, including
   a. primary diagnostic screen for renal disease;
   b. diagnostic imaging to rule out renovascular disease and coarctation, if indicated;
   c. endocrinological studies (e.g., thyroid function), if indicated;
3. construct an effective initial management plan, including
   a. lifestyle approaches for an obese patient (weight loss, exercise, salt restrictions, dietary counseling);
   b. selection of appropriate anti-hypertensive medication;

c. determination as to whether the patient needs specialized care.

9-1-2
November 2004

Hypertension in the Elderly

This Objective is no longer applicable. Please use 9-1 Hypertension

9-1-3
November 2004

Malignant Hypertension

This Objective is no longer applicable. Please use 9-1 Hypertension

9-1-4
November 2010

Hypertensive Disorders of Pregnancy

Rationale

Pregnancy may be complicated by pre-existent chronic hypertension, the onset of preeclampsia, eclampsia, or gestational hypertension. Hypertension in pregnancy may be life-threatening for both mother and baby.

Causal Conditions

1. Chronic hypertension with or without preeclampsia or eclampsia
2. Gestational hypertension with or without preeclampsia or eclampsia

Key Objectives

Given a pregnant patient with hypertension and/or proteinuria, the candidate will diagnose hypertensive disorders of pregnancy, as well as their causes, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify and take urgent action in cases of preeclampsia or eclampsia.

Enabling Objectives

Given a pregnant patient with a hypertensive disorder, the candidate will

1. list and interpret critical clinical findings, including
   a. diagnose the presence of preeclampsia or eclampsia;
2. list and interpret critical clinical and laboratory findings, including
   a. appropriate urine and hematologic investigations;
3. construct an effective plan of management, including
   a. urgent measures for the treatment of preeclampsia and eclampsia;
   b. refer the patient for specialized care if necessary.

9-2
November 2009

Hypotension, Shock

Rationale

Hypotension/shock is a frequently encountered, life-threatening emergency. Regardless of the underlying cause, certain general measures are usually indicated that can be life-saving.

Causal Conditions

1. Cardiac output diminished
   a. Hypovolemia
      i. Hemorrhage
      ii. Third space loss
      iii. Other loss
   b. Cardiac dysfunction
      i. Intrinsic
         A. Myopathy (e.g., ischemic)
         B. Rhythm abnormalities
         C. Mechanical (e.g., valvular disease)
      ii. Extrinsic or Obstructive
         A. Pulmonary embolus
         B. Pulmonary hypertension
         C. Tension pneumothorax
         D. Pericardial disease
         E. Aortic dissection
         F. Venacaval obstruction
2. Distributive (diminished systemic vascular resistance)
   a. Sepsis
   b. Anaphylaxis
   c. Inadequate tissue oxygenation
      i. Neurogenic, autonomic blockade
      ii. Drugs
      iii. Spinal shock
      iv. Addisionian crisis

Key Objectives

Given a patient with hypotension, the candidate will diagnose the cause and urgency, paying particular attention to the presence or absence of shock. The candidate will initiate an appropriate and timely management plan.

Enabling Objectives

Given a patient with hypotension, the candidate will

1. list and interpret critical findings, including
   a. symptoms and signs that indicate shock;
   b. information necessary to diagnose the underlying cause of hypotension;
2. list and interpret critical clinical investigations, including
   a. tests to confirm the presence of shock as well as the underlying cause;
3. construct an effective initial management plan, including
   a. restore tissue perfusion depending on the underlying cause;
   b. initiate specific therapeutic interventions for the underlying cause of shock.

9-2-1
September 2009

Anaphylaxis

This Objective is no longer applicable. Please use 4 ALLERGIC AND ATOPY

10

Breast Disorders

Please see Breast Lump, Breast Cancer Screening 10-1
or Breast Discharge 10-2
or Gynecomastia 10-3

10-1
June 2010

Breast Lump, Breast Cancer Screening

Rationale

While breast lumps are common, and considering that breast cancer is prevalent in women, it is important to note that not all breast lumps are cancerous. Screening for breast cancer in women is a common component of the periodic health examination.

Causal Conditions

1. Breast carcinoma
   a. Noninvasive
   b. Invasive
2. Non-cancerous conditions
   a. Fibrocystic change
   b. Lumps
   c. Breast infections
   d. Associated with lactation
   e. Not associated with lactation

Key Objectives

Given a patient who presents with a breast lump, or abnormal breast screening result (mammography, physical examination), the candidate will diagnose the cause, severity, and urgency and will initiate a management plan with particular emphasis on the need to rule out breast cancer.

Enabling Objectives

Given a patient with a breast lump or abnormal breast screening, the candidate will

1. list and interpret critical clinical findings, including
   a. components of an appropriate history and physical examination;
   b. identification of risk factors for malignancy;
   c. differentiation between malignant and non-malignant conditions;
2. list and interpret critical investigations
3. construct an effective management plan, including
   a. treatment;
   b. referral when appropriate;
   c. follow-up assessment and support.

10-2
June 2010

Breast Discharge

Rationale

Although noticeable breast secretions are normal in most reproductive-aged women, spontaneous persistent discharge may reflect underlying disease and requires investigation.

Causal Conditions

1. Galactorrhea
   a. Idiopathic
   b. Hyperprolactinemia
      i. Physiologic
      ii. Drugs, including herbal remedies
      iii. Pituitary tumors
2. Breast neoplasm

Key Objectives

Given a patient with breast discharge, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, with emphasis on differentiating between galactorrhea and other causes of breast discharge.

Enabling Objectives

Given a patient with breast discharge, the candidate will

1. list and interpret critical clinical findings, including
   a. examination of breasts for skin lesions;
   b. charactistics of discharge;
   c. breast mass;
2. list and interpret critical investigations and laboratory findings, including
   a. diagnostic cytology;
   b. diagnostic imaging;
3. construct an effective management plan and determine appropriate follow-up, including
   a. counsel/educate the patient (e.g., possible fear of cancer);
   b. determine if the patient requires specialized care.

10-3
November 2010

Gynecomastia

Rationale

Although a pathological cause of gynecomastia is unusual, it is important to exclude the more serious causes.

Causal Conditions

1. Physiologic
   a. Newborn
   b. Adolescence
   c. Elderly
2. Pathologic
   a. Deficient production or action of testosterone or receptor blockade
   b. Increased estrogen or precursors
   c. Medications or illicit drugs
   d. Primary malignancy of the breast

Key Objectives

Given a patient with gynecomastia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. The candidate should differentiate between gynecomastia and breast carcinoma.

Objectives

Given a patient with gynecomastia, the candidate will

1. list and interpret critical clinical findings, including
   a. determine if the patient requires further investigation;
   b. differentiate physiologic from pathologic causes;
2. list and interpret critical investigations, including
   a. appropriate imaging studies;
   b. appropriate laboratory studies;
3. construct an effective initial management plan, including
   a. reassure the patient with physiologic gynecomastia;
   b. determine if the patient requires specialized care.

11
November 2009

Burns

Rationale

Burns are relatively common and, depending upon severity, may be life-threatening or fatal.

Causal Conditions

1. Thermal
2. Electrical
3. Chemical
4. Radiation

Key Objectives

Given a patient who presents with burns, the candidate will diagnose the severity and manage the complications. In particular, the candidate will institute initial management of major thermal trauma.

Enabling Objectives

Given the patient with burns, the candidate will

1. list and interpret critical clinical findings, including
   a. determine the severity and extent of the burn;
   b. determine the risk of associated inhalation injury or other associated clinical problems;
   c. determine patient's tetanus immunization status;
2. list and interpret critical investigations, including
   a. laboratory and imaging studies;
3. construct an effective initial management plan, including
   a. resuscitate and stabilize the patient, including the use of appropriate intravenous fluids;
   b. provide physiologic monitoring and pain control;
   c. identify patients requiring special care.

12

Calcium/Phosphate Concentration Abnormal, Serum

Please see Calcium Disorders 12-2

12-1
September 2009

Hypercalcemia

This Objective is no longer applicable. Please use 12-2 CALCIUM DISORDERS

12-2
November 2009

Calcium Disorders

Rationale

Patients who develop hypocalcemia, particularly if the onset is acute, may develop tetany and/or seizures. Severe or prolonged hypercalcemia may cause irreversible end-organ damage and may be life-threatening.

Causal Conditions

1. Hypocalcemia
   a. Loss of calcium from the circulation
      i. Hyperphosphatemia (e.g., renal insufficiency)
      ii. Pancreatitis
      iii. Osteoblastic metastases
      iv. Drugs (e.g., EDTA)
      v. Rhabdomyolysis
   b. Decreased vitamin D production or action
      i. kidney injury
      ii. Rickets
      iii. Malabsorption
      iv. Neonatal
   c. Decreased parathyroid hormone production or action
      i. Postoperative
      ii. Autoimmune
      iii. Diminished response
      iv. Post parathyroidectomy
   d. Low magnesium
2. Hypercalcemia
   a. Increased intestinal absorption
      i. Increased intake (e.g., milk-alkali syndrome)
      ii. Vitamin D mediated (e.g., sarcoidosis)
   b. Increased bone resorption
      i. Malignancy
      ii. Hyperparathyroidism
      iii. Hyperthyroidism
      iv. Immobilization
   c. Diminished excretion (e.g., diuretics)

Key Objectives

Given the patient with either hypo- or hypercalcemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with hypocalcemia, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate the hypocalcemia related to renal disease from that due to other causes;
   b. recognize features of tetany;
2. list and interpret critical clinical investigations, including
   a. assess severity utilizing ionized calcium and/or total calcium corrected for albumin level;
   b. interpret phosphate, magnesium, parathyroid hormone, and vitamin D levels, and renal function;
3. construct an effective initial management plan, including
   a. administer intravenous calcium in patients with symptomatic hypocalcemia;
   b. select patients in need of specialized care.

Given the patient with hypercalcemia, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate the hypercalcemia caused by malignancy from that due to other causes;
   b. determine the volume status of the patient;
2. list and interpret critical clinical investigations, including
   a. assess severity utilizing ionized calcium and/or total calcium corrected for albumin level;
   b. determine causal condition(s) using laboratory testing and imaging;
3. construct an effective initial management plan, including
   a. administer fluid resuscitation with or without medications in patients with severe hypercalcemia;
   b. select patients in need of specialized care.

12-3
November 2004

Hypophosphatemia, Fanconi Syndrome

This Objective is no longer applicable. Please use 12-2 CALCIUM DISORDERS

12-4
September 2009

Hyperphosphatemia

This Objective is no longer applicable. Please use 12-2 CALCIUM DISORDERS

13
June 2010

Cardiac Arrest

Rationale

Cardiac arrest is life threatening and relatively common, particularly in the hospital setting. Timely basic and advanced cardiac life support improves patient survival.

Causal Conditions

1. Coronary artery disease
2. Cardiac conduction abnormalities
3. Myocardial abnormalities
4. Non-cardiac causes (e.g., pulmonary embolus)

Key Objectives

Given a patient who presents with cardiac arrest, the candidate will be able to initiate immediate acute cardiac life support, and construct an appropriate subsequent management plan.

Enabling Objectives

Given the patient with cardiac arrest, the candidate will

1. list and interpret critical clinical findings, including
   a. pulseless circulatory state;
   b. features that may help determine the cause of the arrest;
2. list and interpret critical investigations
3. construct an effective management plan, including
   a. initiation of basic and acute cardiac life support protocols;
   b. communication with family members concerning the event, including
      i. outcome
      ii. breaking bad news
      iii. organ donation
      iv. autopsy request.

14
November 2009

Chest Pain

Rationale

Chest pain is a very common clinical presentation with a spectrum of underlying causes ranging from benign to life-threatening.

Causal Conditions

1. Cardiovascular
   a. Ischemic
      i. Acute coronary syndromes
      ii. Stable angina pectoris
   b. Non-ischemic
      i. Aortic aneurysm
      ii. Pericarditis
2. Pulmonary or mediastinal
   a. Pulmonary embolus or pulmonary infarct
   b. Pleuritis
   c. Pneumothorax
   d. Malignancy
3. Gastro-intestinal
   a. Esophageal spasm or esophagitis
   b. Peptic ulcer disease
   c. Mallory-Weiss syndrome
   d. Biliary disease or pancreatitis
4. Anxiety disorders
5. Chest wall pain (e.g., costochondritis)

Key Objectives

Given a patient who presents with chest pain, the candidate will diagnose the cause and severity, with particular attention to excluding life-threatening diagnoses.

Enabling Objectives

Given the patient with chest discomfort, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate cardiac from non-cardiac pain;
   b. determine the presence of cardiac risk factors;
   c. recognize that serious cardiovascular disease may present atypically;
   d. perform and interpret an appropriate physical examination;
2. list and interpret critical investigations, including

   a. interpret electrocardiogram (ECG) and appropriate laboratory tests;
   b. select, as appropriate, patients for additional investigations (e.g., stress testing, imaging);
3. construct an effective initial management plan, including
   a. determine urgency of clinical condition;
   b. initiate appropriate therapies in urgent situations (e.g., acute coronary syndrome, aortic dissection);
   c. refer for urgent specialized care, as required;
   d. initiate secondary preventive strategies as indicated.

15

Coagulation Abnormalities

Please see Bleeding Tendency, Bruising 15-1
or Venous Thrombosis, Hypercoagulable State 15-2

15-1
November 2010

Bleeding Tendency, Bruising

Rationale

A bleeding tendency (excessive, delayed, or spontaneous bleeding) may signify serious underlying disease. Urgent management may be required.

Causal Conditions

1. Disorders of primary hemostasis
   a. Platelet number or function
      i. Congenital (e.g., von Willebrand disease)
      ii. Acquired (e.g., medication)
   b. Vessel abnormality
      i. Congenital (e.g., collagen disorders)
      ii. Acquired (e.g., medications)
2. Disorders of secondary hemostasis
   a. Congenital (e.g., factor VIII)
   b. Acquired (e.g., vitamin K deficiency)
   c. Fibrinolysis (e.g., disseminated intravascular coagulopathy (DIC))

Key Objectives

Given a patient with a bleeding tendency or bruising, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with a bleeding tendency or bruising, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate between disorders of primary and secondary hemostasis and their respective causes;
2. list and interpret critical investigations, including
   a. appropriate laboratory studies;
3. construct an effective initial management plan, including
   a. manage acute bleeding;
   b. prevent further episodes;
   c. determine if the patient requires specialized care;
   d. counsel and educate the patient and his family.

15-2
November 2010

Venous Thrombosis, Hypercoagulable State

Rationale

Patients who present with venous thrombosis or pulmonary embolism may have an underlying hypercoagulable state.

Causal Conditions

1. Congenital (e.g., sickle cell anemia)
2. Acquired (e.g., pregnancy)

Key Objectives

The candidate will identify patients at risk for venous thromboembolism and will recognize when to investigate for an underlying hypercoagulable state.

Enabling Objectives

Given a patient with venous thrombosis, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history to determine predisposing factors;
2. list and interpret critical investigations, including
   a. diagnostic imaging;
   b. laboratory studies aimed at excluding an underlying hypercoagulable state, where appropriate;
3. construct an effective initial management plan, including
   a. order anticoagulation;
   b. determine if the patient needs a referral.

16

Constipation

Please see Adult Constipation 16-1
or Pediatric Constipation 16-2

16-1
June 2010

Adult Constipation

Rationale

Constipation is a common presenting complaint, with a number of possible functional and organic causes. It may have a significant effect on quality of life, and may be the presenting feature of significant pathology.

Causal Conditions

1. Diet, lifestyle
2. Irritable bowel syndrome
3. Drugs
4. Neurogenic (central or peripheral)
5. Myopathic
6. Metabolic
7. Pregnancy
8. Obstructive lesions
9. Anorectal disease

Key Objectives

Given an adult patient with constipation, the candidate will diagnose the cause, severity, and will initiate an appropriate management plan.

Enabling Objectives

Given an adult patient with constipation, the candidate will

1. list and interpret critical clinical findings, including
   a. the features of the patients' history and physical examination that distinguish functional from organic causes;
2. list and interpret critical investigations, including
   a. investigations required to determine whether the patient needs endoscopic examination or diagnostic imaging;
3. construct an effective initial management plan, including
   a. put in place a conservative plan of symptom management (e.g., dietary and lifestyle changes, appropriate laxative use);
   b. outline a plan for managing constipation that is secondary to medications;
   c. determine if the patient requires specialized care.

16-2
June 2010

Pediatric Constipation

Rationale

Constipation is a common problem in children. It is important to differentiate functional from organic causes, recognizing that the vast majority of children do not have an organic cause for constipation.

Causal Conditions

1. Neonate and Infant
   a. Dietary
   b. Anatomic (e.g., Hirschsprung disease)
2. Older child
   a. Dietary
   b. Psychologic
   c. Anatomic (e.g., bowel obstruction)
   d. Neurologic
   e. Endocrine/metabolic
   f. Other (e.g., celiac disease, cystic fibrosis)

Key Objectives

Given a child who presents with constipation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan

Objectives

Given a child who presents with constipation, the candidate will

1. list and interpret critical clinical findings, including
   a. clinical features that help to distinguish functional from organic;
   b. the social and psychological effects of chronic constipation;
2. list and interpret critical clinical investigations, including:
   a. the possibility that no investigation may be necessary;
3. construct an effective initial management plan, including
   a. initial and long-term therapy including laxatives, diet, and education;
   b. multidisciplinary approach as needed;

17
November 2009

Contraception

Rationale

Contraception can be accomplished through a variety of methods. Ideally, the prevention of pregnancy should be directed at education of both partners.

Causal Conditions

1. Non-permanent contraception
   a. Hormonal contraception
   b. Barrier methods
   c. Intrauterine devices
   d. Other (e.g., abstinence)
2. Permanent contraception
   a. Male sterilization
   b. Female sterilization

Key Objectives

Given a patient who presents with a need or request for contraception, the candidate will discuss the treatment available options and initiate an appropriate management plan.

Enabling Objectives

Given the patient requesting or requiring contraception, the candidate will

1. list and interpret critical clinical findings, including
   a. obtain a general and sexual history including risk factors for complications;
   b. perform an appropriate physical examination;
2. list and interpret critical clinical investigations, including
   a. perform cultures, Papanicolaou smear, and pregnancy test;
3. construct an effective initial management and prevention plan, including
   a. discuss the various contraception options with the patient, including
      i. risks of failure;
      ii. potential complications;
      iii. protection against sexually transmitted infections;
      iv. drug interactions associated with each method;
   b. discuss emergency contraceptives as back-up when needed.

18
November 2010

Cough

Rationale

Cough is a common problem for which patients seek medical advice. Assessment of cough is important in order to distinguish benign from serious causes.

Causal Conditions

1. Acute cough
   a. Infectious
   b. Irritant
   c. Other (e.g., cardiac)
2. Chronic cough (lasting 3 weeks or longer)
   a. Upper respiratory tract
   b. Pulmonary
   c. Gastrointestinal (e.g., gastroesophageal reflux)
   d. Cardiac
   e. Other (e.g., medications, work-related exposure)

Key Objectives

Given a patient with a cough, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating benign from more serious causes requiring full investigation and further management.

Enabling Objectives

Given a patient with a cough, the candidate will

1. list and interpret critical clinical findings, including
   a. discrimination between acute and chronic cough;
   b. differentiation of benign from more serious causes;
   c. triggers and aggravating factors;
2. list and interpret critical investigations, including
   a. appropriate imaging investigations;
   b. pulmonary function testing;
3. construct an initial management plan, including
   a. determining if the patient requires specialized care;
   b. prescribing appropriate medication;
   c. counseling and educating the patient with chronic cough
   d. reassuring the patient if he does not require further investigation.
   e. advising the patient on work-related issues, if necessary.

19
June 2011

Cyanosis, Hypoxia

Rationale

Cyanosis is the bluish discoloration of the tissues that results when the concentration of reduced hemoglobin is increased. Hypoxia is defined as insufficient levels of oxygen in tissues to maintain cell function. These findings may indicate a serious underlying condition, and may require urgent management.

Causal Conditions

1. Central cyanosis or hypoxemia
   a. High alveolar-arterial (A-a) gradient
      i. Shunting (e.g., tetralogy of Fallot, acute respiratory distress syndrome)
      ii. V/Q (ventilation-perfusion) mismatch (e.g., cystic fibrosis, pulmonary embolus)
      iii. Diffusion impairment (e.g., restrictive lung disease)
   b. Normal A-a gradient
      i. Hypoventilation (e.g., opioid overdose)
      ii. High altitude
2. Peripheral (e.g., low cardiac output, cold exposure)

Key Objectives

Given a patient with cyanosis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to determining if hypoxemia or hypoxia is present.

Objectives

Given a patient with cyanosis, the candidate will

1. list and interpret critical clinical findings, including those derived from
   a. an appropriate history and physical examination in order to distinguish central from peripheral cyanosis, and to determine severity and complications;
2. list and interpret critical investigations (e.g., calculation of A-a gradient)
3. construct an effective initial plan of management, including
   a. initiate resuscitation of the critically ill patient;
   b. initiate treatment of underlying cause;
   c. refer to specialized care if indicated.

19-1
November 2004

Cyanosis/Hypoxemia/Hypoxia in Children

This Objective is no longer applicable. Please use 19 Cyanosis, Hypoxia

20
November 2010

Limp In Children

Rationale

Limp is a labored, jerky or strenuous way of walking, usually caused by weakness, pain, or deformity. Although usually caused by benign conditions, at times it may be life or limb threatening.

Causal Conditions

1. Congenital (lower limb, spine)
2. Acquired (lower limb, spine)
   a. Infection
   b. Inflammation
   c. Tumors
      i. Benign
      ii. Malignant
3. Other
   a. Growing pains
   b. Pain amplification syndromes

Key Objectives

Given a child with a limp, the candidate will identify the most likely cause, in particular ruling out the most serious possible diagnoses. Note, in particular, that the most serious diseases causing a limp or leg pain in children are usually unilateral.

Enabling Objectives

Given a child with a limp, the candidate will

1. list and interpret critical clinical findings, including
   a. determine whether the pain originates in bone, joint, or soft tissue. Localize the site of pain and determine the site of pathology (consider referred pain).
   b. determine if the limp or pain is unilateral or bilateral;
   c. recognize signs and symptoms suggestive of serious disease;
   d. calculate leg length discrepancies;
   e. describe stance and gait;
2. list and interpret critical investigations, including
   a. appropriate diagnostic imaging (e.g., X-ray, nuclear scan);
   b. appropriate diagnostic imaging modalities;
3. construct an effective initial management plan, including
   a. determine if the patient requires specialized care;
   b. determine if the patient needs to be referred to other health care professionals;
   c. in the case of a child persistent pain or limp, determine if further assessment is needed.

21
June 2011

Developmental Delay

Rationale

Primary care physicians are often the first clinicians to assess development in an infant, and to recognize delayed or atypical development. Early intervention can have a significant positive impact on outcomes in children with many developmental disorders, so systematic developmental surveillance is an integral part of primary health care for children.

Causal Conditions

1. Global developmental delay
   a. Neurological disorders (e.g., fetal alcohol spectrum disorder, cerebral dysgenesis)
   b. Genetic and metabolic disorders (e.g., trisomy 21, congenital hypothyroidism)
   c. Toxic exposures (e.g., lead)
   d. Severe psychosocial deprivation
2. Speech and language delay
   a. Hearing impairment
   b. Developmental language disorder
   c. Autism spectrum disorders (when associated with atypical social and behavioral features)
3. Motor delay
   a. Cerebral palsy
   b. Muscular dystrophies
   c. Developmental coordination disorder

Key Objectives

Using a validated developmental screening tool, the candidate will identify children with delayed or atypical development in one or more domains. Children for whom developmental concern has been raised will be referred to early developmental intervention services, which can become involved prior to specialized developmental assessment.

Enabling Objectives

Given a young patient with developmental delay, the candidate will

1. list and interpret critical clinical findings, including
   a. use of validated developmental screening tool to identify domains of developmental delay;
   b. thorough relevant history and physical examination, with particular attention to identification of immediately modifiable causal conditions (e.g., toxic exposures, severe neglect);
2. list and interpret relevant investigations, including
   a. audiology assessment in case of delayed language development;
   b. diagnostic investigations (e.g., genetic and metabolic tests, neuroimaging) if indicated;
3. construct an effective plan of management, including
   a. immediate referral for specialized pediatric assessment in case of developmental regression;
   b. referral for early intervention services in case of a delay in any developmental domain;

c. determination as to whether specialized or multidisciplinary assessment and intervention are required;
d. involvement of appropriate community services for family support;
e. ongoing supportive communication with the family.

21-1
September 2012

Adults with Developmental Disabilities

Rationale

The need for health care for adults with developmental disabilities is growing as a result of social insertion measures and of longer life expectancy than in the past. This group may have complex health problems and poor health status.

Causal Conditions

1. Unknown etiology
2. Known etiology and associated conditions
   a. Genetic syndromes (e.g., Down Syndrome)
   b. Autism spectrum disorder
   c. Fetal alcohol spectrum disorder
   d. Brain injury (e.g., cerebral palsy)
   e. Central nervous system infection
   f. Other

Key Objectives

Given an adult with developmental disability, the candidate will identify common physical, mental and behavioral issues and initiate an appropriate management plan. Particular attention should be paid to the known disparities in health status and health care for this group, adapting communication to the patient's level of intellectual and adaptive functioning and to the interdisciplinary coordination of care.

Enabling Objectives

Given an adult with developmental disability, the candidate will

1. list and interpret critical clinical findings, including
   a. assessed level of intellectual and adaptive functioning;
   b. assessed atypical presentations of serious illness and/or pain (e.g., infection, trauma);
   c. assessed risk for abuse and neglect;
2. list and interpret critical investigations depending on the disability (e.g., thyroid stimulating hormone (TSH) in Down Syndrome, hearing and vision testing)
3. construct an effective initial management plan, including
   a. assess capacity for voluntary and informed consent;
   b. obtain input and assistance from caregivers;
   c. initiate interdisciplinary care, if necessary;
   d. perform appropriate screening and preventive measures (e.g., for infectious diseases and cancer);
   e. appropriate use of psychotropic medication (e.g., antipsychotics), including discussion of risks/benefits.

22

Diarrhea

Please see Acute Diarrhea 22-1
or Chronic Diarrhea 22-2
or Pediatric Diarrhea 22-3

22-1
November 2009

Acute Diarrhea

Rationale

Acute diarrhea is defined as a disturbance of stool frequency and/or consistency. Diarrheal diseases are extremely common worldwide. Even in North America, morbidity and mortality are significant.

Causal Conditions

1. Infection
   a. Viruses
   b. Bacteria
   c. Parasites
2. Drugs or toxins
3. Ischemic
4. Inflammatory bowel disease
5. Metabolic disease (e.g., hyperthyroidism)

Key Objectives

Given a patient with acute diarrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to the history of risk factors associated with specific causes and the assessment for such complications as volume loss or electrolyte abnormalities.

Enabling Objectives

Given a patient with acute diarrhea, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate small from large bowel diarrhea;
   b. identify potential risk factors for specific infections (e.g., travel);
   c. perform an appropriate history and physical examination to determine severity and complications (e.g., volume depletion, co-morbidities);
2. list and interpret critical investigations, including
   a. perform appropriate laboratory investigations and other tests (e.g., stool cultures, electrolytes);
3. construct an effective initial management plan, including
   a. initiate dietary interventions where appropriate;
   b. initiate rehydration where appropriate;
   c. initiate specific therapy only when indicated;
   d. refer to specialized care when indicated by the possible diagnosis or by the case severity;
   e. alert the public health authorities when required.

22-2
November 2009

Chronic Diarrhea

Rationale

Chronic diarrhea is defined as a disturbance of stool frequency and/or consistency of greater than four weeks' duration.

Causal Conditions

1. Steatorrhea
   a. Luminal
      i. Pancreatic insufficiency
      ii. Cholestasis
      iii. Ileal disease or resection
      iv. Bacterial overgrowth
   b. Mucosal
      i. Lactase deficiency
      ii. Celiac disease
2. Large bowel
   a. Secretory diarrhea (e.g., villous adenoma)
   b. Inflammatory diarrhea
      i. Inflammatory bowel disease
      ii. Infection
      iii. Other (e.g., radiation, ischemic colitis)
   c. Motility disorder (e.g.,irritable bowel syndrome)
3. Small bowel
   a. Osmotic diarrhea
   b. Secretory diarrhea
      i. Tumors
         A. Neuroendocrine (e.g., carcinoid)
         B. Neoplasia (e.g., lymphoma)
      ii. Mucosal
   c. Motility disorders (e.g., diabetic neuropathy)

Key Objectives

Given a patient with chronic diarrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the history should focus on contrasting small and large bowel diarrhea.

Enabling Objectives

Given a patient with chronic diarrhea, the candidate will

1. list and interpret clinical findings, including
   a. differentiate pancreatic and biliary causes from small bowel and large bowel causes of diarrhea;

   b. differentiate osmotic from secretory diarrhea;
   c. differentiate maldigestion from malabsorption;
   d. diagnose irritable bowel syndrome on the basis of history and appropriate exclusion of other causes;
2. list and interpret critical investigations, including
   a. select and interpret investigations for malabsorption and specific underlying causes;
   b. select and interpret investigations for other causes of chronic diarrhea;
3. construct an effective initial management plan, including
   a. prevent, recognize, and treat related complications (e.g., other manifestations of inflammatory bowel disease);
   b. select patients in need of specialized care or consultation;
   c. conduct education and counseling of patients with malabsorption and inflammatory bowel disease.

22-3
November 2009

Pediatric Diarrhea

Rationale

Diarrhea is defined as a disturbance of stool frequency and/or consistency. It is considered acute if the duration is less than fourteen days. Diarrhea is a common problem in infants and children. In most cases, it is mild and self-limited, but the potential exists for significant morbidity and mortality from hypovolemia, dehydration, and electrolyte abnormalities.

Causal Conditions

1. Infections
2. Diet-related (e.g., milk protein intolerance)
3. Ischemic intestinal damage (e.g., intussusception)
4. Infections
5. Malabsorption
   a. Lactase deficiency
   b. Cystic fibrosis
   c. Celiac disease
6. Other causes
   a. Drugs
   b. Laxative abuse
   c. Inflammatory bowel disease

Key Objectives

Given a child with diarrhea, the candidate will obtain a detailed history of the nature of the diarrhea and associated symptoms. The candidate will diagnose the cause, severity, and complications, paying particular attention to signs and symptoms of dehydration or hypovolemia, and will initiate an appropriate management plan.

Enabling Objectives

1. list and interpret critical clinical findings, including
   a. given a patient with acute diarrhea, elicit a history for risk factors of infectious causes;
   b. given a patient with chronic diarrhea, elicit a history of infectious, dietary, or systemic symptoms and/or complications;
   c. conduct a physical examination to assess the etiology, severity, or complications of diarrhea (e.g., growth delay);
2. list and interpret critical investigations in view of the common etiologies, including
   a. select and interpret the basic investigations for malabsorption;
   b. select and interpret the basic investigations for chronic infections and other causes;
3. construct an effective management plan, including
   a. provide resuscitation for acutely ill patients;
   b. select patients who require referral to a specialist;
   c. refer to public health authorities if required.

23
November 2009

Diplopia

Rationale

Diplopia, or double vision, is the major symptom associated with dysfunction of the extraocular muscles or abnormalities of the motor nerves innervating these muscles.

Causal Conditions

1. Monocular diplopia (e.g., refractive error, cataract)
2. Binocular diplopia
   a. Oculomotor nerve dysfunction
      i. ischemia
      ii. diabetes-associated
      iii. multiple sclerosise
      iv. intercranial mass (e.g., aneurysm)
   b. Myasthenia gravis
   c. Graves' orbitopathy
   d. Orbital inflammation, infection, or tumor
   e. Fracture of orbital floor or "blow out"
   f. Decompensation of childhood phoria (e.g., squint)

Key Objectives

Given a patient with diplopia, the candidate will diagnose the cause and severity of diplopia and will initiate an appropriate management plan. Of particular importance is the clinical determination of whether true binocular diplopia is present, which resolves with occlusion of vision to either eye.

Enabling Objectives

Given a patient with diplopia, the candidate will

1. list and interpret critical clinical findings, including
   a. indications of the underlying disease process (e.g., pain, features of hyperthyroidism);
   b. establish onset and development;
   c. perform an appropriate physical examination (e.g., eyes, neurologic, thyroid);
2. list and interpret critical investigations, including
   a. identification of underlying medical conditions;
3. construct an effective initial management plan, including
   a. selection of patients in need of specialized care.

24
November 2009

Dizziness, Vertigo

Rationale

Dizziness is a common, but imprecise complaint. Physicians need to determine whether it refers to vertigo, which may be a symptom of significant intracranial disease, or a non-specific symptom that could be related to non-vestibular causes.

Causal Conditions

1. Vertigo
   a. Peripheral vestibular dysfunction
      i. Benign positional vertigo
      ii. Peripheral vestibulopathy
      iii. Ménière's disease
      iv. Drugs (e.g., aminoglycosides)
      v. Acoustic neuroma
2. Central vestibular dysfunction
   a. Cerebrovascular
   b. Multiple sclerosis
   c. Drugs (e.g., anticonvulsants, hypnotics, alcohol)
3. Other dizziness
   a. Hyperventilation
   b. Disequilibrium (e.g., poor mobility, peripheral neuropathy)
   c. Presyncope
   d. Anxiety or panic disorder

Key Objectives

Given a patient complaining of dizziness, the candidate will discriminate between vertigo and other causes.

Enabling Objectives

Given a patient with dizziness or vertigo, the candidate will

1. list and interpret critical clinical findings, including
   a. distinguish clinically between amongst vertigo, gait disturbances, orthostatic light-headedness, and other disorders;
   b. differentiate patients with central versus peripheral causes of vertigo on the basis of history and physical examination;
2. list and interpret critical investigations, including
   a. selection of patients requiring specialized testing;
3. construct an effective initial management plan, including
   a. determine which patients with central vertigo require more urgent management;
   b. describe the symptomatic management of patients with benign causes of vertigo;

c. counsel and educate patients with benign causes of dizziness or vertigo;
d. select patients in need of specialized care.

25
June 2010

The Dying Patient

Rationale

Physicians are frequently faced with patients dying from incurable or untreatable diseases. In such circumstances, the important role of the physician is to alleviate suffering and to provide comfort and compassion to patients and their family.

Key Objectives

Given a dying patient, the candidate will formulate an appropriate palliative care plan that ensures optimal control of pain and other symptoms, maintenance of human dignity, and recognize the important role of family and social support.

Enabling Objectives

Given a dying patient, the candidate will

1. construct an effective management plan, including
   a. discussion at the appropriate time with the patient as to his wishes for care (e.g., resuscitation);
   b. determining whether an advanced directive or substitute decision-maker exists, if the patient is unable to express his wishes;
   c. the use of pharmacotherapy (e.g., analgesia) for symptom control, recognizing appropriate indications, side effects, and complications;
   d. ensuring culturally sensitive emotional, physical, and spiritual support to the patient and family, as appropriate;
   e. appropriate involvement of the healthcare team;
   f. referral to other health care professionals, as needed.

26
November 2009

Dysphagia

Rationale

Dysphagia, difficulty swallowing, is a complaint that should be regarded as a clear signal for potentially serious organic pathology and thus warrants careful and complete evaluation.

Causal Conditions (list is not exhaustive)

1. Oropharyngeal dysphagia
   a. Structural
      i. Peritonsillar abscess
      ii. Pharyngitis
      iii. Tumor
      iv. Zenker diverticulum
   b. Neuromuscular
      i. Central (e.g., cerebrovascular accident (CVA))
      ii. Cranial nerves (e.g., amyotrophic lateral sclerosis (ALS))
      iii. Systemic myopathies (e.g., dermatomyositis)
   c. Xerostomia
2. Esophageal dysphagia
   a. Mechanical obstruction
      i. Intrinsic
         A. Intermittent (e.g., lower esophageal ring, web)
         B. Progressive (e.g., carcinoma, peptic stricture)
         C. Foreign object
      ii. Extrinsic (e.g., mediastinal mass)
   b. Neuromuscular disorder
      i. Intermittent (e.g., diffuse esophageal spasm)
      ii. Progressive (e.g., scleroderma, achalasia)

Key Objectives

Given a patient with dysphagia, the candidate will differentiate oropharyngeal from esophageal causes and initiate a management plan based upon the underlying cause and severity.

Enabling Objectives

Given a patient with dysphagia, the candidate will

1. list and interpret critical clinical findings, including
   a. determine from the history whether the problem is most likely oropharyngeal, or upper or lower esophageal;
   b. determine the characteristics of the esophageal dysphagia that suggest specific underlying disorders;
   c. determine whether the patient is at risk for complications;

2. list and interpret critical investigations, including
   a. selection of patients in need of specific investigations (e.g., barium swallow, endoscopy);
3. construct an effective initial management plan, including
   a. selection of patients in need of specialized care.

27
November 2013

Dyspnea

Rationale

Dyspnea is a subjective sensation of shortness of breath or difficulty breathing, and is a common and distressful symptom. The presence of dyspnea, especially when acute, may indicate serious life-threatening illness. When chronic, it is a major cause of disability.

Causal Conditions

1. Cardiac causes
   a. Myocardial dysfunction (e.g., ischemic cardiomyopathy)
   b. Valvular heart disease
   c. Pericardial disease (e.g., tamponade)
   d. Increased cardiac output (e.g., anemia)
   e. Arrhythmia
2. Pulmonary causes
   a. Upper airway (e.g., foreign body, anaphylaxis)
   b. Chest wall and pleura (e.g., pleural effusion)
   c. Lower airway (e.g., asthma, chronic obstructive pulmonary disease)
   d. Alveolar (e.g., pneumonia)
3. Central causes (e.g., metabolic acidosis, anxiety)

Key Objectives

Given a patient with dyspnea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particularly important is identifying patients with life-threatening causes of dyspnea.

Enabling Objectives

Given a patient with acute dyspnea, the candidate will

1. list and interpret critical clinical findings, including
   a. current airway, breathing, and circulation status;
   b. determination as to whether the dyspnea is of cardiac, pulmonary or central origin;
   c. history of occupational and environmental exposures;
2. list and interpret critical investigations (e.g., electrocardiogram, arterial blood gases, chest X-ray);
3. construct an effective management plan, including
   a. initiating management if the patient presents with life-threatening dyspnea;
   b. referring the patient for specialized care, if necessary;
   c. planning long-term management if the dyspnea is of chronic origin.

27-1
September 2009

Acute Dyspnea (Minutes to Hours)

This Objective is no longer applicable. Please use 27 Dyspnea

27-2
September 2009

Chronic Dyspnea (Weeks to Months)

This Objective is no longer applicable. Please use 27 Dyspnea

27-3
November 2009

Pediatric Respiratory Distress

Rationale

After fever, respiratory distress is one of the most common pediatric emergency complaints, the causes of which can be life-threatening.

Causal Conditions

1. Upper airway problems
   a. Croup
   b. Foreign body aspiration
   c. Laryngeal disorders
   d. Epiglottitis
   e. Retropharyngeal abscess
   f. Choanal atresia
2. Lower airway, pulmonary disorders
   a. Tracheitis, bronchiolitis
   b. Pneumonia, atelectasis
   c. Asthma, bronchospasm
   d. Respiratory distress syndrome of the neonate
   e. Tracheo-esophageal fistula
   f. Pulmonary embolus
3. Pleural disorders
   a. Pleural effusion, empyema
   b. Pneumothorax
4. Neurologic disorders (e.g., drugs)
5. Other (e.g., extrapulmonary restriction)
6. Cardiac disorders
   a. Congestive heart failure (left-to-right shunt, left ventricular failure)
   b. Cardiac tamponade

Key Objectives

Given a patient with pediatric dyspnea or respiratory distress, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, for correct assessment, it is important to consider the respiratory rate in the context of age of the child.

Objectives

Given a patient with pediatric respiratory distress, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate a child who appears well from a child in distress or in critical condition;

   b. for the child in distress or critical condition, first evaluate the airway, breathing, and circulation status, then perform a thorough history and physical examination;
   c. differentiate cardiac from pulmonary, neuromuscular, or other causes;
2. list and interpret critical investigations, including
   a. selection and interpretation of appropriate cardiac and pulmonary investigations (e.g., arterial blood gases, complete blood count (CBC));
3. construct an effective plan of management, including
   a. manage patients with life-threatening respiratory distress, including selection of patients requiring hospitalization and specialized care;
   b. plan long-term management of patients with chronic disease, including secondary prevention strategies.

28
November 2009

Ear Pain

Rationale

The cause of ear pain is usually otologic, but it may be referred. In young children who are most frequently affected by ear infections, a good otologic examination is crucial.

Causal Conditions

1. External ear pain
   a. Infections
      i. Otitis externa (e.g., fungal, bacterial)
      ii. Auricular cellulitis
      iii. Perichondritis
      iv. External canal abscess
   b. Trauma (e.g., frostbite, piercings)
   c. Other (e.g., foreign body, cerumen impaction)
2. Middle and inner ear pain
   a. Infections or inflammation
      i. Acute otitis media
      ii. Serous otitis media
      iii. Mastoiditis
      iv. Myringitis
   b. Trauma (e.g., perforation, barotrauma)
   c. Neoplasms
3. Referred pain
   a. Infections (e.g., sinusitis, dental disease)
   b. Trigeminal neuralgia
   c. Other (e.g., temporomandibular joint dysfunction, thyroiditis)

Key Objectives

Given a patient with ear pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, a careful and complete head and neck examination is required, especially with a normal-appearing ear canal, tympanic membrane, and middle ear.

Enabling Objectives

Given a patient with ear pain, the candidate will

1. list and interpret critical clinical findings, including
   a. determine features on history and physical examination suggestive of infection;
   b. perform an examination of the ear, head, and neck area for other causes of pain;
2. list and interpret critical investigations, including

   a. culture and sensitivity of ear canal discharge, if present;
3. construct an effective initial management plan, including
   a. decide whether supportive measures are all that is required.

29

Edema/Anasarca/Ascites

Please see Generalized Edema 29-1
or Localized Edema 29-2

29-1
June 2010

Generalized Edema

Rationale

Generalized edema is systemic soft tissue swelling produced by expansion of the interstitial fluid volume. This condition may be caused by serious underlying disease.

Causal Conditions

1. Increased capillary hydrostatic pressure
   a. Increased plasma volume due to renal sodium retention
      i. Heart failure
      ii. Reduced systemic vascular resistance (e.g., cirrhosis)
      iii. Primary renal sodium retention (e.g., renal disease, drugs)
      iv. Pregnancy
      v. Premenstrual edema
   b. Decreased arteriolar resistance (e.g., calcium channel blockers, idiopathic)
2. Decreased oncotic pressure (hypoalbuminemia)
   a. Protein loss (e.g., nephrotic syndrome)
   b. Reduced albumin synthesis (e.g., liver disease, malnutrition)
3. Increased capillary permeability (e.g., burns, inflammation)
4. Increased interstitial oncotic pressure (e.g., myxedema)

Key Objectives

Given a patient with generalized edema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to differentiate systemic edema from local edema, and categorize the general mechanism of edema, since management may be affected.

Enabling Objectives

Given a patient with generalized edema, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination;
2. list and interpret critical investigations (e.g., creatinine, urinalysis, chest X-ray)
3. construct an effective initial management plan, including
   a. non-pharmacological measures (e.g., dietary salt restriction);
   b. pharmacological measures;
   c. determination as to whether the patient requires specialized care and/or consultation (e.g., patient with advanced renal, cardiac, or hepatic disease).

29-2
June 2010

Localized Edema

Rationale

Localized expansion of interstitial fluid volume can be caused by serious diseases, and is a common cause of patient concern.

Causal Conditions

1. Venous insufficiency (including postphlebitic syndrome)
2. Deep venous thrombosis (DVT)
3. Trauma
4. Lymphedema (e.g., malignancy, primary)
5. Infection (cellulitis/soft tissue/bone)
6. Inflammation (e.g., ruptured Baker cyst, chronic dermatitis)

Key Objectives

Given a patient with localized edema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, diagnosis of proximal deep venous thrombosis must be considered.

Enabling Objectives

Given a patient with localized edema, the candidate will

1. list and interpret critical clinical findings, including
   a. elicit history of risk factors for DVT;
   b. examine extremity for signs associated with specific causes (e.g., palpable clot, tenderness);
   c. in the case of suspected DVT, classify the patient into a pretest probability category (e.g., Wells criteria);
2. list and interpret critical investigations (e.g., d-Dimer, duplex ultrasonography)
3. construct an effective initial management plan, including
   a. outline the management of DVT including under circumstances where same-day diagnostic testing may be unavailable;
   b. list indications and complications, and explain management and monitoring of anti-coagulant therapy;
   c. counsel the patient about anticoagulant therapy (prevention of postphlebitic syndrome);
   d. investigation of causes of DVT, if indicated (e.g., thrombophilic states, underlying cancer);
   e. outline the management of cellulitis;
   f. determine if the patient requires specialized care.

30
November 2010

Eye Redness

Rationale

Eye redness ("red eye") is a very common complaint. Many of the common causes are relatively benign, but some can lead to significant vision loss and thus require prompt referral.

Causal Conditions

1. Lids, lashes, orbits, lachrymal system
   a. Congenital
   b. Acquired
2. Conjunctiva, sclera
3. Cornea
4. Anterior chamber, iris
5. Trauma

Key Objectives

Given a patient with eye redness, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, prompt referral is required for some conditions that could lead to significant vision loss.

Objectives

Given a patient with eye redness, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate causal conditions that are benign from those that require prompt referral;
   b. determine if vision or visual acuity is affected;
2. list and interpret critical investigations, including
   a. a slit lamp examination, as appropriate;
3. construct an effective initial management plan, including
   a. determine if the patient requires urgent referral.

31

Failure to Thrive

Please see Frailty in the Elderly 31-1
or Failure to Thrive (Infant, Child) 31-2

31-1
June 2010

Frailty in the Elderly

Rationale

Frailty is a term that applies to some older adults who have varying degrees of weight loss and/or malnutrition, cognitive impairment, multiple medical comorbidities, decreased mobility, and/or psychosocial stressors, leading to decreased function (e.g., activities of daily living). A multidisciplinary approach in the form of a comprehensive geriatric assessment has been shown to decrease morbidity and maintain or improve function.

Causal Conditions

Often multi-factorial, including

1. Medications
2. Environmental/Social (e.g., isolation, poverty, elder abuse, neglect)
3. Medical disease
4. Malnutrition (e.g., from poor dentition, malabsorption, dysphagia)
5. Psychiatric (e.g., mild cognitive impairment, dementia, depression, psychosis)
6. Changes in visual acuity
7. Changes in auditory acuity
8. Decreased mobility

Key Objectives

Given a frail elderly patient, the candidate will diagnose the cause, severity, and complications, will conduct an assessment of function and cognition, and will initiate an appropriate management plan that demonstrates an awareness of the importance of a multidisciplinary approach.

Enabling Objectives

Given a frail elderly patient, the candidate will

1. obtain and interpret critical clinical findings, including
   a. complete psychosocial history (e.g., social supports, financial status);
   b. symptoms of medical disease, weight loss, and malnutrition;
   c. comprehensive medication history;
   d. screen for elder abuse and neglect;
   e. assessment of the impact of symptoms on activities of daily living;
   f. physical examination findings of malnutrition;
   g. mental status examination and cognitive function using a validated scale;
2. construct an appropriate plan for further investigation that is supported by the history and physical examination findings
3. construct an effective initial multifactorial management plan, including but not limited to
   a. consultations (with medical specialists and other health professionals);

b. non-pharmacological approaches to nutrition;
c. pharmacological/medical;
    i. recommend interventions to target causes of morbidity;
    ii. outline changes to medications to improve symptoms and minimize adverse effects;
d. community support services;
    i. list services available to support elders in the community (e.g., home care services);
    ii. determine if the patient needs to be referred for counseling about financial concerns or abuse.

31-2
January 2012

Failure to Thrive (Infant, Child)

Rationale

"Failure to thrive" is a term that describes the occurrence of growth failure in either height or weight during childhood. It is essential to be able to identify different growth patterns and the potential associated causes.

Causal Conditions

1. Prenatal
   a. Placental insufficiency
   b. Intrauterine infections
   c. Genetic
   d. Maternal
      i. Pre-existing conditions (e.g., diabetes, renal disease)
      ii. Use of medications, drugs, tobacco, or alcohol
2. Postnatal
   a. Inadequate calorie intake
      i. Caregiver
         A. Inadequate feeding skills
         B. Inappropriate food for age
         C. Neglect
         D. Insufficient lactation
         E. Disturbed mother and child relationship
      ii. Infant
         A. Sucking or swallowing dysfunction (e.g., cleft palate)
         B. Chronic disease (e.g., infection, metabolic disorders)
   b. Inadequate caloric absorption (e.g., gastroesophageal reflux)
   c. Increased caloric requirements (e.g., hyperthyroid, congenital heart disease)
   d. Social determinants (e.g., poverty, societal disorder)
   e. Adverse childhood experience

Key Objectives

Given an infant or child who is failing to thrive, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Special attention should be given to psychosocial and environmental factors as well as disease entities giving rise to poor infant and child maturation.

Enabling Objectives

Given an infant or child with failure to thrive, the candidate will

1. list and interpret critical clinical findings, including
   a. plot growth parameters on a regular basis and recognize when a child or infant has failure to thrive;

   b. perform a history and physical examination to determine the cause of the failure to thrive;
   c. identify possible social risk factors that may be responsible for failure to thrive;
2. perform necessary investigations as appropriate
3. construct an effective initial management plan, including
   a. construct an ongoing program to monitor the progress of such infants or children;
   b. if appropriate, construct a counseling and education program for caregivers of infants or children with poor growth;
   c. appropriately consult with other health professionals and/or community resources.

32
June 2010

Falls

Rationale

Falls are common with many possible contributing factors. They can be associated with serious injury. Multifactorial interventions can prevent falls and their sequelae.

Causal Conditions

1. Medical conditions (e.g., vertigo, gait disturbances, syncope)
2. Psychiatric conditions (e.g., cognitive impairment, substance abuse)
3. Medications
4. Environmental or behavioral risk factors (e.g., walking surface, choice of footwear)
5. Other contributors (e.g., decreased vision, urinary urgency)

Key Objectives

Given a patient with a presenting complaint of falls, the candidate will identify contributing factors and initiate an appropriate management and prevention plan. In particular, the candidate will recognize the patient who is at risk of falling.

Enabling Objectives

Given a patient at risk of falling, the candidate will

1. list and interpret critical clinical findings, including
   a. a description of current and previous falls;
   b. a medical history for risk factors (e.g., medical conditions, medication history, substance abuse);
   c. environmental hazards;
   d. a complete physical and functional evaluation;
2. list and interpret relevant investigations
3. construct an effective initial management plan, including
   a. managing acute and chronic illness with particular attention to a review of medications;
   b. suggesting specific interventions for preventing further falls (e.g., balance/gait training, muscle strengthening exercises);
   c. suggesting appropriate home safety interventions (e.g., removing environmental hazards, grab bars, emergency response systems);
   d. appropriate consultation, including with medical specialists and other health professionals (e.g., physiotherapist and occupational therapist, social worker, pharmacist).

33
November 2013

Fatigue

Rationale

Fatigue is a common presenting complaint, particularly in primary care. However, many patients are not found to have a specific disease process when fatigue is not accompanied by another more specific symptom. Therefore, the key to making a diagnosis is taking a careful and detailed history, followed by an appropriate physical examination and limited laboratory testing.

Although many disease processes may have fatigue as a symptom, the disorders listed here are those characterized almost exclusively by fatigue as a predominant symptom.

Causal Conditions characterized by fatigue as a predominant symptom

1. Iatrogenic/pharmacologic
   a. Hypnotic
   b. Antihypertensives
   c. Antidepressants
   d. Substance abuse
2. Idiopathic
   a. Idiopathic chronic fatigue
   b. Chronic fatigue syndrome
   c. Fibromyalgia
3. Other disease categories associated with fatigue
   a. Psychiatric
   b. Endocrine-metabolic
   c. Cardiopulmonary
   d. Infectious
   e. Connective tissue disorders
   f. Sleep disturbances (e.g. shift work)
   g. Neoplastic-hematologic

Key Objectives

Given a patient with fatigue, the candidate will perform a thorough and complete history and physical examination in order to establish an underlying cause.

Enabling Objectives

Given a patient with fatigue, the candidate will

1. list and interpret critical clinical findings, including
   a. features that are more likely associated with either a psychological or iatrogenic cause of fatigue;
   b. results of a complete physical examination;

2. critically select and interpret clinical investigations, recognizing that in the absence of localizing features, tests may be of limited value;
3. construct an effective initial management plan, including
   a. treating any underlying causes;
   b. outlining a plan of management that will help minimize the impact of fatigue on function and quality of life if no underlying cause can be identified.

34
November 2004

Fractures/Dislocations

This Objective is no longer applicable. Please use 109-16 Fractures and Dislocations

35
November 2009

Ataxia (Gait)

Rationale

Neurologic abnormalities of gait can result from disorders affecting several levels of the nervous system. The type of abnormality observed clinically often indicates the site affected.

Causal Conditions

1. Cerebellar ataxial
   a. Tumors
   b. Vascular
   c. Hereditary
   d. Multiple sclerosis
   e. Drugs
   f. Alcohol
2. Sensory ataxia
   a. Vestibular
   b. Proprioceptive
   c. Visual
3. Other disorders of locomotion
   a. Other central nervous system (e.g., cerebral)
   b. Parkinson's disease

Key Objectives

Given a patient with a gait disturbance, the candidate will distinguish ataxia from other abnormalities. The candidate will determine a localization, etiology, outcome, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with a gait disturbance, the candidate will

1. list and interpret critical findings, including
   a. appropriate history and physical examination to differentiate between ataxia and other causes of gait abnormality, and to establish the localization and cause;
2. list and interpret critical investigations, including
   a. appropriate laboratory and diagnostic imaging investigations based on clinical findings;
3. construct an effective initial management plan, including
   a. selection of patients in need of specific management or specialized care.

36
November 2011

Genetic Concerns

Rationale

An individual's genetic make-up has an impact on their development, as well as their predisposition to disease. Genetic variation and mutation may cause disease directly, or interact with various experiential and environmental factors to influence development and medical conditions.

Causal Conditions

1. Chromosomal (e.g., aneuploidy, rearrangements)
2. Single-gene
   a. Mendelian (e.g., autosomal dominant)
   b. Non-Mendelian (e.g., mitochondrial, epigenetic)
3. Prenatal Exposure
   a. Drugs or toxins (e.g., fetal alcohol spectrum disorder)
   b. Infectious (e.g., congenital rubella)
   c. Maternal disease (e.g., maternal diabetes)
4. Multifactorial (e.g., neural tube defects)

Key Objectives

The candidate will recognize situations where a person or a population is at risk of a genetic or epigenetic condition. Given a patient with evidence of, or a family history consistent with, a genetic or congenital condition, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan.

Enabling Objectives

Recognize where disease in an individual might reflect the existence of risk factors inherent to a given population (e.g., Tay-Sachs disease).

Given a patient presenting with clinical findings suggestive of a genetic etiology, the candidate will

1. list and interpret relevant clinical findings, including
   a. obstetrical, medical and family history, as well as ethnic or geographic origin and social determinants of health;
   b. results of a physical examination of the patient and of selected family members, if need be;
2. list and interpret relevant laboratory and diagnostic imaging;
3. construct an effective initial management plan, including, if required:
   a. genetic counselling;
   b. examination of reproductive options;
   c. a referral for specialized evaluation, genetic testing, community resources, social and psychological support services.

36-1
June 2010

Ambiguous Genitalia

This Objective is no longer applicable. Please use 36-2 Congenital Anomalies, Dysmorphic Features

36-2
November 2013

Congenital Anomalies, Dysmorphic Features

Rationale

Congenital anomalies and dysmorphic features are often associated with long-term disability, making early detection and identification vital. Although early involvement of pediatric or genetic specialists is appropriate, primary care physicians are often required to contribute immediate care, and subsequently assist with long-term management.

Causal Conditions

1. Teratogenic disorders (e.g., fetal alcohol spectrum disorder, congenital cytomegalovirus infections)
2. Genetic disorders (e.g., Down syndrome, fragile X syndrome)
3. Mechanical forces (e.g., constriction band syndrome)

Key Objectives

Given a patient with congenital anomalies or dysmorphic features, the candidate will investigate the cause, determine the severity of the immediate presentation, and will initiate an appropriate management plan. Particular attention should be paid to the identification of patients requiring early referral for specialized care, and to the provision of supportive counseling for parents.

Enabling Objectives

Given a patient with congenital anomalies or dysmorphic features, the candidate will

1. list and interpret critical clinical findings, including those derived from
   a. an appropriate history with particular attention to any potential teratogenic exposures and family history;
   b. an appropriate physical examination, with particular attention to signs of severe anomalies (e.g., cardiovascular malformations) to ambiguous genitalia as well as to recognizable phenotypic patterns (e.g., Down syndrome);
2. list and interpret appropriate investigations (e.g., karyotype, screening for toxoplasmosis, rubella, cytomegalovirus, herpes simplex, and human immunodeficiency virus [TORCH]);
3. construct an effective initial management plan, including
   a. stabilization and immediate referral in case of hemodynamic instability;
   b. referral for specialized pediatric or genetic care, if necessary;
   c. referral for therapeutic services, counseling and family support groups, if indicated;
   d. provision of family support and counseling regarding recurrence risk, including discussion of prenatal strategies for the prevention of recurrence, indications for antenatal screening and diagnostic prenatal testing, and referral for genetic counseling, if indicated;

37

Glucose Abnormal, Serum/Diabetes Mellitus/Polydipsia

Please see Glucose Abnormalities 37-1
or Diabetes Mellitus 37-2

37-1
June 2010

Glucose Abnormalities

Rationale

Maintenance of the blood sugar within normal limits is essential for health. In the short-term, hypoglycemia is much more dangerous than hyperglycemia. Fortunately, both are uncommon clinical problems outside of diabetes mellitus.

Causal Conditions

1. Hypoglycemia
   a. Postprandial
   b. Fasting
      i. Secondary to overutilization of glucose (e.g., sulfonylureas)
      ii. Secondary to impaired glucose production (e.g., adrenal insufficiency)
2. Hyperglycemia
   a. Diabetes mellitus
   b. Endocrine
   c. Drugs

Key Objectives

Given a patient with a glucose abnormality, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to management of emergent situations and to prevention of complications.

Enabling Objectives

Given a patient with a glucose abnormality, the candidate will

1. list and interpret critical clinical findings, including
   a. perform an appropriate history and physical examination to determine cause and complications;
   b. distinguish those patients with true hypoglycemia from those with pseudohypoglycemia;
2. list and interpret critical investigations, including
   a. laboratory and radiological (e.g., glucose tolerance test);
3. construct an effective management plan for hyper- or hypoglycemia, including
   a. counseling and education for prevention;
   b. emergent treatment;
   c. determine if the patient requires specialized care;
   d. refer the patient to appropriate support services.

37-2
June 2010

Diabetes Mellitus

Rationale

Diabetes mellitus is an increasingly common multi-system disease associated with a relative or absolute impairment of insulin secretion together with varying degrees of peripheral resistance to the action of insulin.

Causal Conditions

1. Type 1
   a. Autoimmunity
   b. Idiopathic
2. Type 2
   a. Obesity
   b. Other (e.g., genetic predisposition, medications)
3. Gestational diabetes mellitus

Key Objectives

Given a patient with diabetes mellitus, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. Particularly important are early detection of the disease, and recognition of medical emergencies such as acute hypoglycemia, diabetic ketoacidosis, and hyperosmolar nonketotic coma.

Enabling Objectives

Given a patient with diabetes mellitus, the candidate will

1. list and interpret critical clinical findings, including
   a. history and physical examination aimed at identifying
      i. long-term complications;
      ii. secondary causes;
      iii. risk factors;
2. list and interpret critical investigations, including
   a. laboratory and radiological for monitoring and emergent situations;
3. construct an effective management plan, including
   a. education and counseling (e.g., lifestyle modifications, management of risk factors, intensive glycemic control);
   b. prevention and management of emergent situations (e.g., hypoglycemia);
   c. prevention and management of complications (e.g., diabetic nephropathy, retinopathy);
   d. determination as to whether the patient requires specialized care and/or referral to other health care professionals.

38

Hair and Nail Complaints

Please see Alopecia 38-1
or Nail Complaints 38-2

38-1
November 2009

Alopecia

Rationale

Alopecia may be physiological or due to local scalp disease or underlying systemic disease and can result in psychological distress.

Causal Conditions

1. Scarring absent
   a. Androgenetic alopecia (most common in adult men and postmenopausal women)
   b. Telogen effluvium (loss of mature hair) due to acute illness, surgery
   c. Anagen effluvium (loss of growing hair) due to chemotherapy
   d. Alopecia areata, alopecia totalis (localized or total loss of body hair)
   e. Traumatic alopecia (e.g., trichotillomania)
   f. Infections (e.g., tinea capitis)
2. Scarring present (associated with fibrosis and scar tissue)
   a. Androgenetic alopecia (most common in 30 to 40% of adult men and postmenopausal women)
   b. Infection (e.g., severe folliculitis, dissecting cellulitis)
   c. Skin conditions (e.g., bullous diseases)
   d. Chemical alopecia
   e. Tumors
   f. Traction alopecia

Key Objectives

Given a patient with alopecia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling objectives

Given a patient with alopecia, the candidate will

1. perform a history and focused physical examination to differentiate among the causes of alopecia;
2. list and interpret critical investigations guided by clinical findings;
3. construct an effective initial management plan, including
   a. educate patients regarding cause and potential treatments;
   b. select patients in need of referral.

38-2
June 2010

Nail Complaints

Rationale

Nail disorders are common conditions. Although in themselves nail changes may be innocuous, they may indicate underlying disease.

Causal Conditions

1. Local nail problems (e.g., paronychia, herpetic whitlow, ingrown toenails)
2. Underlying condition
   a. Shape changes (e.g., clubbing)
   b. Surface changes (e.g., pitting from psoriasis)
   c. Color changes (e.g., black from melanoma)

Key Objectives

Given a patient with nail abnormalities, the candidate will diagnose the cause (local or systemic), severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with nail abnormalities, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination to distinguish local from systemic problems;
2. list and interpret critical investigations, including
   a. differentiation between various causes through further investigation (e.g., fungal scraping, biopsy);
3. conduct an effective initial management plan, including
   a. managing local nail disorders;
   b. determination as to whether the patient needs a referral (e.g., public health nurse for nail care).

39
November 2013

Headache

Rationale

Headache is a common clinical presentation. Patients with headaches due to serious or life-threatening conditions must be differentiated from those with benign primary headache disorders.

Causal Conditions

1. Primary headache (e.g., migraine, chronic daily headache with medication overuse)
2. Secondary headache
   a. Associated with vascular disorders (e.g., severe arterial hypertension)
   b. Associated with non-vascular disorders (e.g., intracranial infection)
   c. Other (e.g., systemic viral infection, carbon monoxide exposure)

Key Objectives

Given a patient with headaches, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating benign causes of headaches from potentially serious causes.

Enabling Objectives

Given a patient with headaches, the candidate will:

1. list and interpret critical clinical findings, including
   a. symptoms and signs that indicate a need for urgent brain imaging and/or referral for specialized care;
   b. symptoms and signs to differentiate amongst the various causes of headaches;
2. list and interpret critical investigations, including
   a. appropriate and cost-effective laboratory and diagnostic imaging tests;
   b. indications and contraindications for lumbar puncture;
3. construct an effective management plan, including
   a. describing and contrasting symptomatic and prophylactic treatments;
   b. avoiding medication overuse;
   c. determining if the patient needs urgent and/or specialized care;
   d. educating and counseling the patient regarding the causes and management of headaches;
   e. determining if the patient is at risk for narcotic addiction or overuse.

40
June 2011

Hearing Loss and Deafness

Rationale

Hearing loss is common and may often be prevented. The underlying causes may often be treated.

Causal Conditions

1. Conductive hearing loss
   a. External ear pathology
      i. Congenital (e.g., atresia)
      ii. Inflammation or infection (e.g., otitis externa)
      iii. Obstruction of canal (e.g., wax, foreign body)
   b. Middle ear pathology
      i. Congenital (e.g., atresia)
      ii. Infection (e.g., otitis media)
      iii. Ossicular pathology (e.g., otosclerosis)
      iv. Trauma (e.g., tympanic membrane perforation)
      v. Tumors (e.g., glomus, adenoma)
2. Sensory - neural hearing loss
   a. Acquired (e.g., presbycusis, noise-induced hearing loss)
   b. Congenital (e.g., Alport syndrome)

Key Objectives

Given patients with hearing loss or deafness, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating between conductive and sensory-neural hearing loss. Patients should be educated and counseled regarding prevention of further hearing loss. Hearing loss in infants must be identified as early as possible to prevent delayed development.

Objectives

Given patients with hearing loss or deafness, the candidate will

1. list and interpret critical clinical findings, including
   a. identify potential risks for further hearing loss;
   b. ensure early identification of hearing loss or deafness in infants and children;
2. list and interpret critical investigations, including
   a. screening in all neonates;
   b. those required to differentiate between conductive and sensorineural hearing loss, where appropriate;
3. construct an effective initial management plan, including
   a. referring the patient for specialized care, if necessary;
   b. counseling and educating the patient regarding prevention of further hearing loss;
   c. follow-up for a patient with otitis media, selecting antibiotics if appropriate.

41
June 2010

Hemiplegia, Hemisensory Loss with or without Aphasia

Rationale

Acute hemiplegia generally heralds the onset of serious medical conditions, usually of vascular origin, that may be effectively treated by advanced medical and surgical techniques. Urgent investigation is required to determine if a patient is eligible for thrombolytic therapy.

Causal Conditions

1. Ischemic stroke
   a. Thrombosis (e.g., atherosclerosis, vasoconstriction)
   b. Embolism
      i. Cardiac (e.g., atrial fibrillation)
      ii. Aortic source
2. Hemorrhagic stroke
   a. Intracerebral hemorrhage (e.g., hypertension)
   b. Subarachnoid hemorrhage
3. Other
   a. Subdural hematoma
   b. Infectious or inflammatory (e.g., brain abscess, multiple sclerosis)
   c. Tumors
   d. Migraine

Key Objectives

Given a patient with hemiplegia or hemisensory loss with or without aphasia, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, rapid identification of an acute stroke will ensure prompt initiation of morbidity-reducing therapy.

Enabling Objectives

Given a patient with hemiplegia or hemisensory loss with or without aphasia, the candidate will

1. list and interpret critical clinical findings, including
   a. perform an appropriate history and physical examination to
      i. differentiate causes of hemiplegia or hemisensory loss based on time course;
      ii. determine the risk factors for, presence of, or complications from any cause;
2. list and interpret critical investigations, including
   a. computed tomography scan for acute presentation;
   b. appropriate laboratory studies;
   c. those appropriate for clinical findings (e.g., echocardiogram for significant murmur);
3. construct an effective initial management plan, including
   a. describe the acute medical or surgical management in case of hemiplegia, including stabilization and urgent

specialist referral;

b. list the primary and secondary preventive measures used in the prophylaxis and complications of stroke;
c. refer the patient to other health care professionals for rehabilitation;
d. educate and counsel the patient about the importance of rehabilitation.

42

Hemoglobin Serum, Abnormal

Please see Anemia 42-1
or Elevated Hemoglobin 42-2

42-1
November 2010

Anemia

Rationale

Anemia is a common problem; however, making the diagnosis may be complex. Anemia may be the sole manifestation of serious medical disease.

Causal Conditions

1. Normocytic
   a. Red blood cell loss
      i. Obvious (e.g., trauma, metro/menorrhagia)
      ii. Occult
   b. Decreased red blood cell production
      i. Marrow production (e.g., stem cell disorder, bone marrow replacement)
   c. Increased destruction (e.g., sickle cell anemia, immune-mediated, mechanical)
   d. Multi-factorial (e.g., anemia of chronic disease)
2. Microcytic (e.g., iron deficiency, hemoglobinopathies)
3. Macrocytic (e.g., vitamin B12 or folate deficiency, alcohol use)

Key Objectives

Given a patient with anemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to red cell morphology, identification of common causes in specific patient populations, and risk factors for serious underlying conditions.

Enabling Objectives

Given a patient with anemia, the candidate will

1. list and interpret critical clinical findings, including
   a. identify common causes in specific patient populations;
   b. identify risk factors for or features suggestive of serious underlying conditions;
2. list and interpret critical investigations, including
   a. red cell morphology;
   b. specific investigations according to red cell morphology and history and physical findings;
3. construct an effective initial management plan, including
   a. counsel and educate the patient for prevention of recurrence or further complications;
   b. refer the patient for specialized care (e.g., suspicion of colon cancer), if necessary.

42-2
November 2010

Elevated Hemoglobin

Rationale

Elevated hemoglobin levels may be a manifestation of polycythemia vera or secondary erythrocytosis. Elevated hemoglobin levels may be due to many treatable causes. Unrecognized polycythemia may cause end-organ damage.

Causal Conditions

1. Red cell mass increased
   a. Polycythemia vera - low or normal erythropoetin (EPO)
   b. Secondary erythrocytosis - elevated EPO
      i. Appropriate EPO elevation (e.g., hypoxemia)
      ii. Inappropriate EPO elevation (e.g., EPO secreting tumor)
   c. Relative polycythemia (decreased plasma volume)

Key Objectives

Given a patient with elevated hemoglobin levels, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan

Enabling Objectives

Given a patient with elevated hemoglobin level, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate between primary and secondary erythrocytosis;
   b. assess the presence of complications;
2. list and interpret critical investigations, including
   a. appropriate laboratory and diagnostic imaging;
3. construct an effective initial management plan, including
   a. refer the patient for specialized care, if necessary;
   b. counsel and educate (e.g., smoking cessation, work environment).

43
November 2009

Hirsutism, Hypertrichosis

Rationale

Hirsutism refers to male-type terminal hair growth and distribution usually caused by excess androgen. In women, it may be associated with virilization. Hypertrichosis is a generalized increase in immature (lanugo-type) hair which is not androgen driven. Virilization includes the features of hirsutism in addition to other features of male phenotype.

Causal Conditions

1. Hirsutism
   a. Familial (no endocrine disorder)
   b. Androgen excess (may be associated with virilization or irregular menses)
      i. Ovarian source
         A. Polycystic ovary syndrome
         B. Idiopathic
         C. Ovarian tumor (arrhenoblastoma)
      ii. Adrenal
         A. Congenital adrenal hyperplasia
         B. Cushing syndrome
         C. Adrenal tumor
      iii. Other
         A. Drugs
         B. Obesity
         C. Aging in women
2. Hypertrichosis
   a. Idiopathic
   b. Drugs (e.g., phenytoin, minoxidil)
   c. Systemic illness (e.g., hypothyroid, anorexia)

Key Objectives

Given a patient with hirsutism or hypertrichosis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine whether the pattern or rate of hair growth has changed, and whether virilization is present.

Enabling Objectives

Given a patient with hirsutism or hypertrichosis, the candidate will

1. list and interpret critical clinical findings, including
   a. a history and physical examination designed to reveal features of hirsutism with or without virilization, or hypertrichosis;
2. list and interpret critical investigations, including

   a. those which will distinguish common or benign causes of hirsutism or hypertrichosis from more serious or unusual disorders;
   b. further investigations as required (e.g., diagnostic imaging or laboratory tests);
3. construct an effective management plan for patients, including
   a. distinguish those patients who can be managed without referral from those requiring specialized investigation and/or treatment;
   b. counsel and educate patients with hirsutism or hypertrichosis on conservative methods of managing excess hair.

44
November 2013

Language and speech disorders

Rationale

It is important to differentiate speech from language abnormalities. Patients with impairment in comprehension and/or use of the form, content, or function of language are said to have a language disorder. Patients with impaired articulation, fluency and voice are said to have a speech disorder.

Causal Conditions

1. Language disorder
   a. Delayed and developmental language impairment (e.g., deafness, autism spectrum disorder, neglect, abuse)
   b. Degenerative, vascular, or other central nervous system disorders (e.g., stroke)
   c. Head injury
2. Speech disorder
   a. Articulation disorder (e.g., dysarthria)
   b. Fluency (e.g, stuttering, Parkinson disease)
   c. Speech apparatus lesions (e.g., cleft palate, head and neck neoplasm)

Key Objectives

Given a patient with a language or speech disorder, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating language from speech disorders.

Enabling Objectives

Given a patient with a language or speech disorder, the candidate will

1. list and interpret critical clinical findings, including
   a. assessment of hearing in a child;
   b. presence of malignancy;
   c. results of an appropriate neurological examination;
2. list and interpret critical investigations
3. construct an effective initial management plan, including
   a. referring the patient for specialized care with appropriate health care professionals (e.g., speech therapist, ear, nose, and throat surgeon), if necessary;
   b. counseling and educating the patient and/or family.

45
June 2010

Acid-Base Abnormalities Hydrogen

Rationale

Abnormally high or low hydrogen ion concentration - acidemia and alkalemia, respectively - is encountered relatively frequently, particularly in hospital-based practice. Acidemia, in particular, may be caused by an underlying life-threatening condition. Several acid-base abnormalities can coexist in a single patient.

Causal Conditions

1. Metabolic acidosis
   a. High anion gap
      i. Increased acid production
         A. Exogenous (e.g., methanol)
         B. Endogenous acids (e.g., ketoacidosis)
      ii. Decreased renal acid excretion (kidney injury)
   b. Normal anion gap
      i. Gastrointestinal bicarbonate loss (e.g., diarrhea)
      ii. Renal bicarbonate loss (e.g., renal tubular acidosis, interstitial nephritis)
2. Metabolic alkalosis
   a. Expanded effective arterial blood volume (e.g., mineralocorticoid excess)
   b. Contracted effective arterial blood volume
      i. Gastrointestinal loss (e.g., vomiting)
      ii. Renal loss (e.g., diuretics)
   c. Exogenous ingestion
3. Respiratory acidosis
   a. Neuromuscular causes (e.g., medications, illicit drugs)
   b. Pulmonary causes of decreased alveolar ventilation (e.g., chronic obstructive pulmonary disease)
   c. Kyphoscoliosis
   d. Hypoventilation (e.g., due to obesity)
4. Respiratory alkalosis
   a. Hypoxemia
   b. Metabolic (e.g., hepatic failure)
   c. Cardio-pulmonary disorders (e.g., pneumonia, embolism)
   d. Central nervous system disorders (e.g., subarachnoid hemorrhage)
   e. Drugs (e.g., salicylate)
   f. Miscellaneous (e.g., fever, pain, pregnancy)

Key Objectives

Given a patient with an acid-base abnormality, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, particularly when dealing with a high anion gap metabolic acidosis.

Objectives

Given a patient with an acid-base abnormality, the candidate will

1. through efficient, focused, data gathering, diagnose cause of acidemia/alkalemia expeditiously
2. list and interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
   a. appropriate investigations for acidemia/alkalemia in order to identify the primary abnormality and the adequacy of the associated secondary compensation;
3. construct an effective initial plan of management for acidemia/alkalemia
   a. describe general supportive measures;
   b. describe management for specific acid-base disorders;
   c. determine if the patient needs to be referred for consultation.

46
June 2010

Infertility

Rationale

Infertility is a common condition that is defined as the inability of a couple to conceive after one year of intercourse without contraception. Both partners must be investigated.

Causal Conditions

1. Female
   a. Ovulatory dysfunction (e.g., hypogonadotropic hypogonadism, polycystic ovarian syndrome)
   b. Tubal and peritoneal abnormalities (e.g., pelvic inflammatory disease [PID])
   c. Uterine and cervical factors (e.g., fibroids)
2. Male
   a. Testicular dysfunction (e.g., hypogonadotropic hypogonadism, viral orchitis)
   b. Post-testicular dysfunction (e.g., abnormal sperm transport)

Key Objectives

Given a couple with infertility, the candidate will diagnose the cause and complications, and will explain the therapeutic options.

Enabling Objectives

Given a couple with infertility, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination of both partners;
2. list and interpret critical investigations, including
   a. semen analysis;
   b. tests confirming ovulation;
   c. other labs (e.g., prolactin, thyroid-stimulating hormone);
3. construct an effective initial management plan, including
   a. counsel the couple regarding preconceptual use of folic acid;
   b. counsel and educate the couple regarding diagnostic and therapeutic options;
   c. determine whether either patient requires specialized care;
   d. recommend changes to the workplace environment, if indicated.

47

Incontinence

Please see Fecal Incontinence 47-1
or Incontinence, Urine, Adult 47-2
or Incontinence, Urine, Pediatric / Enuresis 47-3

47-1
June 2010

Fecal Incontinence

Rationale

Fecal incontinence varies from inadvertent soiling with liquid stool to the involuntary excretion of feces. This disability has a profoundly negative impact on patient quality of life by virtue of diminished patient self-assuredness and social isolation.

Causal Conditions

1. Pelvic floor intact
   a. Neurologic conditions
   b. Overflow (e.g., impaction)
2. Pelvic floor affected
1. Acquired (e.g., traumatic birth)
2. Congenital

Key Objectives

Given a patient with fecal incontinence, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize that incontinence can be multifactorial (e.g., patients with significant diarrhea/fecal urgency of any cause with subsequent incontinence due to a disease affecting cognition or mobility, or due to a relative defect in pelvic floor that is overwhelmed by the diarrhea).

Enabling Objectives

Given a patient with fecal incontinence, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination, including an obstetrical history;
2. list and interpret critical investigations, including
   a. further investigations of the diarrhea, if indicated;
   b. further studies, such as stool analysis, endorectal ultrasound, colonoscopy, sigmoidoscopy, anoscopy, anorectal manometry, and functional testing, if indicated;
3. construct an effective management plan.

47-2
June 2010

Incontinence, Urine, Adult

Rationale

Incontinence has increased in frequency as our population ages. Incontinence has a detrimental effect on quality of life and an impact on physical and psychological morbidity.

Causal Conditions

1. Transient
   a. Polyuria
   b. Impaired ability and/or willingness to reach toilet
   c. Drugs, alcohol
2. Neurologic (e.g., cauda equina syndrome)
3. Anatomic
   a. Stress incontinence
   b. Urgency incontinence (e.g., cystitis)
   c. Overflow incontinence (e.g., prostate enlargement, multiple sclerosis)

Key Objectives

Given a patient with urinary incontinence, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular addressing the two most common causes (stress and urgency).

Enabling Objectives

Given a patient with urinary incontinence, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination including pelvic, rectal, and neurological examination;
2. list and interpret critical laboratory investigations, including
   a. urinalysis and culture;
3. construct an effective initial management plan, including
   a. a plan for cystitis and urethritis;
   b. counsel patients regarding therapeutic and surgical options (e.g., anticholinergic medication for urgency incontinence);
   c. make an appropriate referral (e.g., incontinence program), if need be.

47-3
June 2010

Incontinence, Urine, Pediatric / Enuresis

Rationale

Enuresis is the involuntary passage of urine in a child. The majority of children with enuresis have primary nocturnal enuresis. Daytime and secondary enuresis are much less common, but require differentiating between underlying diseases and stress-related conditions.

Causal Conditions

1. Primary enuresis (e.g., family history)
2. Secondary enuresis (e.g., urinary tract infection, vesicoureteral reflux)

Key Objective

In a child five years of age or older, determine whether a physical abnormality is causing the involuntary passage of urine.

Enabling Objectives

Given a patient with enuresis, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination to
      i. determine whether medical reasons underlie the enuresis;
      ii. determine whether a stressful event preceded the occurrence of enuresis (e.g., birth of a sibling);
2. list and interpret critical clinical and laboratory findings, including
   a. urinalysis and urine culture;
3. construct an effective management plan, including
   a. counsel, educate, and reassure the parents of a child with primary nocturnal enuresis, including treatment options;
   b. counsel and reassure the child to improve self-esteem;
   c. in the case of secondary enuresis, treat the underlying cause;
   d. determine if the patient needs to be referred to a specialist.

48
June 2010

Erectile Dysfunction

Rationale

Erectile dysfunction is present when an erection of sufficient rigidity for sexual intercourse cannot be acquired or sustained more than 75% of the time. It has a major impact on relationships.

Causal Conditions

1. Neurologic (e.g., diabetes mellitus)
2. Cardiovascular
3. Pharmacologic (e.g., alcohol)
4. Hormonal (e.g., testosterone deficiency)
5. Psychological or emotional (e.g., performance anxiety)
6. Chronic systemic disease (e.g., kidney injury)

Key Objectives

Given a patient with erectile dysfunction, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with erectile dysfunction, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination, in particular to
      i. determine if there is an organic or psychological cause;
      ii. identify reversible causes (e.g., medications);
2. list and interpret critical investigations, including
   a. laboratory investigations (e.g., testosterone, blood glucose, thyroid hormone);
3. construct an effective initial management plan, including
   a. determine the therapy based on the underlying cause;
   b. treat associated medical conditions;
   c. suggest lifestyle changes (e.g., weight loss);
   d. describe the indications and contraindications for inhibitors of phosphodiesterase type V and other drugs and devices;
   e. determine if the patient needs to be referred for specialized care;
   f. counsel and educate the patient (and/or partner, as appropriate).

49
November 2013

Jaundice

Rationale

Jaundice, which has both a biochemical (elevated bilirubin) and clinical (evidence of scleral icterus) definition, is a common condition with many causes. In some cases, early diagnosis and treatment is important for eventual desirable outcome. In certain cases, public health issues may need to be addressed.

Causal Conditions

1. Unconjugated hyperbilirubinemia (pre-hepatic)
   a. Overproduction (e.g., hemolysis)
   b. Decreased hepatic uptake (e.g., congestive heart failure)
   c. Decreased bilirubin conjugation (e.g., Gilbert syndrome, neonatal jaundice)
2. Conjugated hyperbilirubinemia (hepatic)
   a. Intrahepatic cholestasis (e.g., drugs, cirrhosis)
   b. Extrahepatic cholestasis (e.g.,cholelithiasis)
   c. Hepatocellular injury (e.g., sepsis, hypoperfusion)
   d. Other (e.g., infiltrative states, fatty liver)

Key Objectives

Given a patient with jaundice, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to identify life-threatening conditions.

Objectives

Given a patient with jaundice, the candidate will

1. list and interpret critical clinical findings, including
   a. results of an appropriate history and physical examination aimed at determining the underlying cause, with special attention to the presence of risk factors for infectious disease and the use of or the exposure to toxic substances;
2. list and interpret critical investigations, including
   a. radiologic and laboratory tests needed to make the diagnosis;
3. construct an effective initial management plan, including
   a. determining whether the patient requires specialized care or an urgent referral
   b. notifing public health authorities, if necessary.

49-1
November 2010

Neonatal Jaundice

Rationale

Jaundice, usually mild unconjugated bilirubinemia, affects many newborns. Although most cases are physiological, some are indicative of serious underlying disorders.

Causal Conditions

1. Unconjugated hyperbilirubinemia
   a. Increased bilirubin production
      i. Hemolytic causes (e.g., Coombs positive, Coombs negative)
   b. Decreased bilirubin conjugation
      i. Metabolic or genetic (e.g., Gilbert syndrome, hypothyroidism)
      ii. Physiologic (e.g., breast milk jaundice)
   c. Gastrointestinal (e.g., sequestered blood)
2. Conjugated hyperbilirubinemia
   a. Decreased bilirubin uptake
      i. Infections (e.g., sepsis, neonatal hepatitis)
      ii. Cholestasis (e.g., total parenteral nutrition)
      iii. Metabolic
      iv. Genetic
   b. Obstructive (e.g., biliary atresia)

Key Objectives

Given a patient with neonatal jaundice, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to jaundice which presents within the first three days after birth or with a rapid onset.

Enabling Objectives

Given a patient with neonatal jaundice, the candidate will

1. list and interpret critical clinical findings, including
   a. determine whether the neonate meets the criteria for treatment of physiologic jaundice;
   b. identify features of serious underlying disorders;
2. list and interpret critical investigations, including
   a. those investigations which differentiate disorders associated with conjugated or unconjugated hyperbilirubinemia;
3. construct an effective initial management plan, including
   a. monitor and manage physiologic jaundice;
   b. refer the patient to appropriate specialists in the case of non-physiologic jaundice;
   c. counsel and reassure parents, as appropriate.

50

Joint Pain

Please see Oligoarthralgia (Pain in One to Four Joints) 50-1
or Polyarthralgia (Pain in More Than Four Joints) 50-2
or Non-Articular Musculoskeletal Pain 50-3
or Back Pain and Related Symptoms (e.g., Sciatica) 50-4
or Neck Pain 50-5

50-1
November 2013

Oligoarthralgia (Pain in One to Four Joints)

Rationale

Acute joint pain may reflect an urgent process that needs immediate evaluation and treatment to prevent permanent damage and loss of function. Chronic pain in a small number of joints is very common, and a very frequent cause of disability.

Causal Conditions

1. Acute joint pain
   a. Injury (e.g., meniscal tear)
   b. Infection
   c. Crystal
   d. Hemarthrosis (e.g., clotting disorder)
   e. Acute reactive arthritis
2. Chronic joint pain
   a. Osteoarthrosis
   b. Periarticular disease (e.g., bursitis, tendonosis)
   c. Pediatric disorders (e.g., slipped epiphysis, Osgood-Schlatter)
3. Non-articular disease (e.g, bone malignancy, leukemia)

Key Objectives

Given a patient with musculoskeletal pain that is localized, the candidate will be able to differentiate joint disease from other anatomic causes, and through history and physical examination determine the acuity and severity of the problem. In particular, the candidate will determine if the patient requires immediate, definitive management, or referral.

Enabling Objectives

Given a patient with joint pain, the candidate will

1. list and interpret critical clinical findings, including
   a. whether the joint, or other tissues, is the source of the pain;
   b. whether the underlying cause is traumatic, inflammatory or mechanical;
   c. whether urgent investigation is required;
   d. impact on function;
   e. an occupational and recreational history;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and other tests;
   b. determination as to when joint aspiration is required, and prescription of the appropriate investigations (e.g., culture, cell count, crystals);
   c. determination as to when appropriate radiologic investigations are required;
   d. determination as to when other investigations are indicated (other cultures, magnetic resonance imaging);
3. construct an effective management plan, including

a. initial management of common inflammatory conditions (e.g., gout, infection);
b. initial management of common injutires (e.g., sprains);
c. referral for specialized care, if indicated (e.g., orthopedic surgery);
d. counseling regarding appropriate return to activities and recognition of the potential for long- term impact on function.

50-2
November 2013

Polyarthralgia (Pain in More Than Four Joints)

Rationale

Chronic pain in or around multiple joints is often the presenting symptom of common, disabling diseases, responsible for a great burden of suffering, loss of function and morbidity. Many of these patients may benefit from early diagnosis and treatment.

Causal Conditions

1. Inflammatory joint pain (e.g., rheumatoid arthritis, juvenile polyarthritis)
2. Mechanical joint pain (e.g., Osteoarthritis)
3. Non-articular disease (e.g., fibromyalgia, polymyalgia rheumatica)

Key Objectives

Given a patient with widespread musculoskeletal pain, the candidate will be able to differentiate true joint disease from other causes, and through history and physical exam determine the acuity and severity of the problem. In particular, the candidate will determine if the disease is inflammatory or not, and initiate appropriate treatment or referral.

Enabling Objectives

Given a patient with joint pain, the candidate will

1. list and interpret critical clinical findings, including
   a. a. determination, based on the history and physical examination, as to whether it is an articular problem and, if so, if it is inflammatory or mechanical;
   b. b. determination, based on the history and physical examination, as to whether there are other features that help make a more definitive diagnosis (e.g., rheumatoid nodules);
   c. impact on function;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and other tests (e.g., radiology, erythrocyte sedimentation rate, anti-CCP [anti-cyclic citullinated peptide]);
3. construct an effective management plan, including
   a. immediate treatment of urgent conditions (e.g., polymyalgia rheumatica);
   b. immediate symptomatic and supportive treatment (e.g., anti-inflammatories);
   c. appropriate referral for more specialized care (e.g., rheumatology, physiotherapy), if indicated;
   d. counseling regarding appropriate return to activities.

50-3
November 2013

Non-Articular Musculoskeletal Pain

Rationale

Non-articular musculoskeletal pain is common, but rarely due to life-threatening or damaging conditions. Often referred to as "soft tissue" pain, it is a common cause of concern, and a frequent source of physician consultation.

Causal Conditions

1. Generalized Pain
   a. Acute pain (e.g., viral infections)
   b. Chronic pain (e.g., fibromyalgia, polymyalgia rheumatica)
2. Localized Pain
   a. Acute
      i. Trauma (see also Fractures and Dislocations)
      ii. Infection (e.g., osteomyelitis, necrotizing fasciitis)
      iii. Vascular (e.g., compartment syndrome, sickle cell disease)
   b. Chronic
      i. Mechanical (e.g., tendonopathy, bursitis)
      ii. Vascular (e.g., intermittent claudication)
      iii. Neoplastic
      iv. Neuropathic

Key Objectives

Given a patient with musculoskeletal pain, the candidate will be able to differentiate symptoms arising from bone, joint, muscle, nerve, or vascular causes. The candidate will be able to further classify the likely pathology underlying the problem, and determine if urgent action is required.

Enabling Objectives

Given a patient with musculoskeletal pain, the candidate will

1. list and interpret critical clinical findings, including
   a. likely anatomic and pathogenic pain mechanisms;
   b. determination as to whether the pain represents a problem requiring urgent or immediate investigation;
   c. impact on function;
   d. an occupational and recreational history;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and other tests;
   b. initial investigations (e.g., X-rays);
   c. further or specialized investigations (e.g., Doppler ultrasound, magnetic resonance imaging, nerve conduction studies), if indicated;
3. construct an effective management plan, including

a. urgent or acute management of serious problems;
b. patient education and counseling regarding self-limited or benign conditions;
c. counseling regarding appropriate return to activities;
d. referral for specialized care, if necessary.

50-4
November 2013

Back Pain and Related Symptoms (e.g., Sciatica)

Rationale

Lower back pain is extremely common, and, in most cases, does not require investigation. However, there are patients presenting with back pain, or signs of nerve compression due to back pathology, who require specific diagnosis and management to ensure good outcome.

Causal Conditions

1. Mechanical back problems
   a. Common back pain
   b. Acute, discogenic nerve root entrapment
   c. Spinal Stenosis and/or cauda equina syndrome
2. Inflammatory arthritis (e.g., ankylosing spondylitis)
3. Infections
4. Fracture
5. Neoplasm
6. Others (e.g., referred pain)

Key Objectives

Given a patient with back pain, the candidate will be able to determine whether the patient must undergo further tests and specific management. In particular, the candidate will determine if the patient requires urgent intervention.

Enabling Objectives

Given a patient with back pain, the candidate will

1. list and interpret critical clinical findings, including
   a. features from the history and the physical examination that suggest the need for urgent investigation or management (e.g., urinary incontinence, fever);
   b. impact on function;
   c. an occupational and recreational history;
   d. determination as to whether the patient requires further investigation or not;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and other tests (e.g., computerized tomography or magnetic resonance imaging, if indicated);
3. construct an effective management plan, including
   a. ensuring initial management of urgent problems, including appropriate referral for specialized care;
   b. counseling and educating the patient about appropriate exercise and return to work;
   c. counseling the patient regarding appropriate return activities;
   d. recognizing the potential for long-term impact on function;
   e. prescribing medications in a safe and effective manner, if necessary (e.g., nonsteroidal anti-inflammatory drugs,

opiates).

50-5
November 2013

Neck Pain

Rationale

Neck pain is extremely common, and, in most cases, does not require investigation. However, there are patients presenting pain, or signs of nerve compression, who require specific diagnosis and management to ensure good outcome. Neck pain may also be due to non non-musculoskeletal causes.

Causal Conditions

1. Mechanical problems
   a. Neck strain
   b. Spondylois
   c. Acute, discogenic nerve root entrapment
   d. Spinal stenosis and/or cord compression
2. Inflammatory arthritis (e.g., ankylosing spondylitis)
3. Infections
4. Fracture
5. Neoplasm
6. Pain from soft tissue structures (e.g., thyroid, pharynx)

Key Objectives

Given a patient with neck pain, the candidate will be able to determine whether the patient must undergo further tests and specific management. In particular, the candidate will determine if the patient requires urgent intervention.

Enabling Objectives

Given a patient with neck pain, the candidate will

1. list and interpret critical clinical findings, including
   a. features on history and physical examination that suggest the need for urgent investigation or management (e.g., in case of neurologic abnormalities or fever);
   b. data from a patient-centered pain history, including the impact on function;
   c. occupational and recreational history;
   d. determination as to whether any further investigation is required or not;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and other tests (e.g., computed tomography or magnetic resonance imaging, if indicated)
3. construct an effective management plan, including
   a. ensuring initial management of urgent problems, including appropriate referral for specialized care
   b. counseling and educating the patient about appropriate exercise and return to work.
   c. recognizing the potential for long-term impact on function;
   d. prescribing medications in a safe and effective manner, if necessary (e.g., nonsteroidal anti-inflammatory drugs,

opiates).

51
November 2009

Abnormal, Serum Lipids

Rationale

Hypercholesterolemia is a common and important modifiable risk factor for ischemic heart disease, cerebrovascular disease and peripheral vascular disease. Determination of levels is usually based upon concomitant risk factors.

Causal Conditions

1. Hypercholesteremia (elevated low-density lipoprotein, lipoprotein (a))
    a. Primary causes
        i. Familial combined hyperlipidemia
        ii. Polygenic
        iii. Familial hypercholesterolemia
    b. Secondary causes
        i. Endocrine (e.g.,diabetes mellitus, hypothyroidism)
        ii. Cholestatic liver disease
        iii. Nephrotic syndrome, chronic kidney injury
        iv. Other
            A. Cigarettes
            B. Obesity
            C. Drugs (e.g., steroids)
2. Hypertriglyceridemia
    a. Primary causes (familial hypertriglyceridemia)
    b. Secondary causes
        i. Obesity
        ii. Diabetes mellitus
        iii. Nephrotic syndrome, chronic kidney injury
        iv. Drugs (e.g., estrogen)
        v. Alcohol
3. Low high-density lipoprotein
    a. Primary
    b. Secondary
        i. Obesity
        ii. Drugs (e.g., anabolic steroids)
        iii. Metabolic syndrome

Key Objectives

Given a patient with abnormal serum lipids, the candidate will diagnose the cause, severity, and complications. In particular, the candidate will identify those patients who will benefit from serum cholesterol reduction, as well as both primary and secondary prevention.

Enabling Objectives

Given a patient with abnormal serum lipids, the candidate will

1. list and interpret critical clinical findings, including
   a. perform a history and physical examination to identify patients with remediable causes for their lipid abnormalities (e.g., hypothyroidism);
   b. select patients at highest risk for subsequent development of ischemic heart disease for drug therapy (e.g., Framingham risk calculation);
2. list and interpret critical investigations, including
   a. further laboratory testing to identify patients with remediable causes for their lipid abnormalities;
3. construct an effective initial management plan, including
   a. recommend lifestyle modification and pharmacologic therapy as appropriate;
   b. discuss risks and benefits of primary versus secondary prophylaxis with lipid-lowering drugs;
   c. select patients in need of specialized care.

52
November 2013

Abnormal Liver Function Tests

Rationale

Abnormal liver function tests are common in clinical practice. Appropriate investigation can distinguish benign reversible liver disease from potentially life-threatening conditions.

Causal Conditions

1. Hepatocellular
   a. Acute (e.g., infection, medication)
   b. Chronic (e.g., infection, medication)
2. Cholestatic
   a. Intrahepatic (e.g., pregnancy)
   b. Extrahepatic (e.g., gallstones)
3. Congenital abnormalities (e.g., Gilbert disease)
4. Other (e.g., celiac disease)

Key Objectives

Given a patient with abnormal liver function tests, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular, assessing for any potential underlying liver disorder or systemic disease.

Enabling Objectives

Given a patient with abnormal liver function tests, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiate between abnormal liver function tests due to disease that require treatment from those that do not;
   b. differentiate primary hepatic disease from systemic disease;
   c. identify complications related to the presence of liver disease (e.g., bleeding, ascites);
2. list and interpret critical investigations, including
   a. laboratory tests appropriate for the identification of specific acute and chronic liver diseases (e.g., viral serology);
   b. diagnostic imaging (e.g., ultrasound);
3. construct an effective initial management plan, including
   a. determining if the patient requires urgent referral or hospitalization;
   b. refering the patient for specialized care (e.g., non-urgent), if necessary;
   c. counseling and educating the patient to prevent further hepatic insult (e.g., primary and secondary prevention strategies for viral hepatitis);
   d. communicating with the public health authorities, if applicable.

53
June 2010

Lump / Mass (Musculoskeletal)

Rationale

Lumps or masses are a common cause for consultation with a physician. Musculoskeletal lumps or masses represent an important cause of morbidity and mortality.

Causal Conditions

1. Neoplastic
   a. Soft tissue
      i. Benign (e.g., lipoma)
      ii. Malignant (e.g., leiomyosarcoma)
   b. Bone (e.g., cyst)
      i. Benign (e.g., cyst)
      ii. Malignant (e.g., Ewing sarcoma)
2. Non-neoplastic
   a. Infectious (e.g., osteomyelitis)
   b. Traumatic (e.g., hematoma)
   c. Inflammatory (e.g., rheumatoid nodules, tendonitis)

Key Objectives

Given a patient with a musculoskeletal lump or mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular to distinguish benign from malignant.

Enabling Objectives

Given a patient with a musculoskeletal lump or mass, the candidate will

1. list and interpret clinical findings, including
   a. an appropriate history and physical examination with particular attention to features suggestive of sarcoma;
2. list and interpret key investigations, including
   a. laboratory and radiological studies, if indicated, and in particular determining if the patient requires a biopsy;
3. construct an effective initial management plan, including
   a. determination as to whether the patient requires specialized or urgent diagnosis and treatment.

54
June 2010

Lymphadenopathy

Rationale

Lymphadenopathy can be localized or diffuse, and benign or malignant. Patients frequently present when they find a palpable lymph node.

Causal Conditions

1. Localized
   a. Reactive (e.g., tonsillitis)
   b. Neoplastic (e.g., metastatic cancer)
2. Diffuse
   a. Infectious (e.g., viral)
   b. Inflammatory (e.g., sarcoidosis)
   c. Neoplastic (e.g., lymphoma)

Key Objectives

Given a patient with lymphadenopathy, the candidate will diagnose the cause, severity, and complications, will initiate an appropriate management plan, and in particular, determine the need for a biopsy.

Enabling Objectives

Given a patient with lymphadenopathy, the candidate will

1. list and interpret relevant clinical findings, including
   a. an appropriate history and physical examination;
2. list and interpret relevant investigations, including
   a. laboratory and radiological studies;
   b. indications for a biopsy;
3. construct an effective management plan, including:
   a. determine whether basic observation and/or treatment is indicated, or if the patient requires urgent referral;
   b. determine if the patient requires non-urgent referral (e.g., serum sickness);
   c. counsel and educate the patient regarding the nature and scope of needed investigations.

54-1
June 2010

Mediastinal Mass

Rationale

Mediastinal masses that are found on X-ray are classified according to location. Location within the mediastinum is important for identifying the cause.

Causal Conditions

1. Anterior
   a. Tumors (e.g., thymoma, lymphoma)
   b. Other (e.g., aneurysm)
2. Middle
   a. Tumors (e.g., bronchogenic cancer)
   b. Other (e.g., sarcoidosis)
3. Posterior
   a. Tumors (e.g., esophageal cancer)
   b. Other (e.g., hiatal hernia)

Key Objectives

Given a patient with a mediastinal mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular, differentiate between causes based on compartment location.

Enabling Objectives

Given a patient with mediastinal mass, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination to help determine the most likely cause;
2. list and interpret relevant investigations, including
   a. laboratory and radiological investigations;
3. construct an effective initial management plan, including:
   a. determine if the patient requires further investigation;
   b. refer the patient for specialized diagnostic tests and treatment, if necessary;
   c. counsel and educate the patient regarding the nature and scope of needed investigations.

55
November 2004

Magnesium Concentration Serum, Abnormal/Hypomagnesemia

This Objective is no longer applicable.

56

Menstrual Cycle, Abnormal

Please see Amenorrhea, Oligomenorrhea 56-1
or Dysmenorrhea 56-2
or Premenstrual Syndrome (PMS) 56-3

56-1
June 2011

Amenorrhea, Oligomenorrhea

Rationale

Amenorrhea and oligomenorrhea are common patient concerns and can be associated with serious underlying pathology. Primary amenorrhea is the absence of menarche by the age of 15. Secondary amenorrhea is the absence of menses for more than 3 cycles or 6 months in women who previously had menses. Absence of menstruation in these circumstances is a reason for investigation and management.

Causal Conditions

1. Primary
   a. Central
      i. Hypothalamus (e.g., functional)
      ii. Pituitary
   b. Ovary (e.g., ovarian dysgenesis, polycystic ovarian disease)
   c. Vaginal, outflow tract (e.g., imperforate hymen)
2. Secondary
   a. Pregnancy
   b. Central
      i. Hypothalamus (e.g., functional, exogenous hormones)
      ii. Pituitary (e.g., prolactinoma)
   c. Other endocrine (e.g., thyroid disorders)
   d. Ovary (e.g., oophorectomy, chemotherapy)
   e. Uterus (e.g., Asherman syndrome)

Key Objectives

Given a patient with oligomenorrhea or amenorrhea, the candidate will first rule out pregnancy. In amenorrhea, the candidate will then differentiate between primary and secondary. The candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with amenorrhea or oligomenorrhea, the candidate will

1. list and interpret critical clinical history, including
   a. results of an appropriate history and physical examination, including a pelvic examination;
2. list and interpret critical investigations, including
   a. appropriate laboratory and radiologic studies, in particular, first rule out pregnancy;
3. construct an effective initial management plan, including
   a. in case of pregnancy;
   b. in case of primary amenorrhea;
   c. in case of secondary amenorrhea, other than pregnancy;

d. determining whether the patient requires specialized care;
e. counseling and education, as appropriate.

56-2
June 2011

Dysmenorrhea

Rationale

Painful menstruation is a very common symptom, and in some this pain can be incapacitating. Dysmenorrhea is a significant cause of absence from work or school.

Causal Conditions

1. Primary/Idiopathic (no pelvic abnormality)
2. Secondary (acquired) (e.g., infections, endometriosis, adnexal abnormalities)

Key Objectives

Given a patient with dysmenorrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Specifically, differentiate primary from secondary dysmenorrhea.

Enabling Objectives

Given a patient with dysmenorrhea, the candidate will

1. list and interpret critical clinical findings, including
   a. obtain a history of the quality and timing of pain, as related to bleeding;
   b. differentiate primary from secondary dysmenorrhea;
   c. perform pelvic examination to exclude possible causes of secondary dysmenorrhea;
2. list and interpret critical investigations, including
   a. Papanicolaou smear, if indicated;
   b. screening test for infection (e.g., vaginal and cervical cultures);
   c. determination of indications for imaging studies (e.g., ultrasound);
3. construct an effective initial management plan, including
   a. outlining treatment options including symptomatic control;
   b. determining whether the patient needs to be refered for investigation (examination under anesthesia, laparoscopy);
   c. determining whether the patient requires specialized care.

56-3
November 2013

Premenstrual Dysphoric Disorder (Premenstrual Syndrome, PMS)

Rationale

Premenstrual dysphoric disorder (premenstrual syndrome or PMS) is a combination of physical, emotional, or behavioral symptoms that occur prior to the menstrual cycle and are absent during the rest of the cycle. The symptoms, on occasion, are severe enough to interfere significantly with work and/or home activities.

Causal Conditions

While the cause of premenstrual dysphoric disorder (PMS) is unknown, there are many theories as to the pathogenesis of this condition.

Key Objectives

Given a patient with premenstrual dysphoric disorder (PMS), the candidate will assess the severity and complications, and will initiate an appropriate management plan. Specifically, differentiate PMS from normal premenstrual symptoms or from other causes of physical and mood changes. Explore the psychosocial impact of the condition.

Enabling Objectives

Given a patient with premenstrual dysphoric disorder (PMS), the candidate will

1. list and interpret critical clinical findings, including
   a. determining if the symptoms are cyclical (e.g., use of a symptom diary);
   b. ensuring that symptoms are not exacerbation of another chronic condition (e.g., major depressive disorder);
   c. evaluating the severity of mood and physical symptoms, as well as their psychosocial impact;
2. list and interpret critical investigations, including
   a. consideration and exclusion of conditions with similar symptomatology (e.g., hypothyroidism, anemia);
   b. recognition of the fact that, in the majority of cases, there is no need for further investigation;
3. construct an effective initial management plan, including
   a. outlining initial management including supportive therapy and counseling on life-style issues (e.g., diet, exercise, stress reduction);
   b. considering the use of hormonal therapy for ovulation suppression (e.g., oral contraceptive);
   c. outlining indications for selective serotonin reuptake inhibitors in the management of premenstrual dysphoric disorder (PMS).

57
June 2010

Menopause

Rationale

Menopause is defined as 12 months of amenorrhea after the final menstrual period, reflecting complete, or near complete, cessation of ovarian function. Promotion of health maintenance in this group of women will enhance physical, emotional, and sexual quality of life.

Causal Conditions

This Objective relates solely to physiological menopause.

Key Objectives

Given a patient with physiological menopause, the candidate will be able to explain and prevent the undesirable effects of menopause.

Enabling Objectives

Given a patient with physiological menopause, the candidate will

1. list and interpret relevant clinical findings, including
   a. an appropriate history and physical examination, in particular, looking for atypical findings or risk factors for complications of menopause;
2. list and interpret investigations, including
   a. those required for well-woman examination;
3. construct an effective initial management plan, including:
   a. counsel and educate the patient on the normal changes during menopause;
   b. reassure the patient about concerns regarding aging and sexuality;
   c. counsel and educate the patient regarding prevention of osteoporosis and cardiovascular disease;
   d. outline risks, benefits, and guidelines for hormone replacement therapy, including topical estrogen therapy;
   e. discuss alternatives to estrogen therapy for some of the symptoms of menopause.

58

Mental Status, Altered

Please see Coma 58-1
or Delirium 58-2
or Dementia 58-3

58-1
November 2013

Coma

Rationale

Coma, whether transient or persistent, is a state of pathologic unconsciousness. Coma requires urgent evaluation to avoid permanent brain injury or death.

Causal Conditions

1. Focal disease (e.g., tumor, stroke)
   a. Diffuse
      i. Vascular (e.g., hypertensive encephalopathy, syncope)
      ii. Infectious (e.g., meningitis, encephalitis)
      iii. Trauma
      iv. Metabolic (e.g., uremia, hypercalcemia, hypoglycemia)
      v. Substance use and overdose
   b. Seizures

Key Objectives

Given a patient in coma, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to urgent and emergent conditions.

Enabling Objectives

Given a patient in coma, the candidate will

1. list and interpret critical clinical findings, including those derived from
   a. a complete history and corroboration of information from appropriate sources;
   b. the identification of most likely causes of coma by means of a complete physical examination including appropriate neurological examination;
   c. the determination of level of consciousness using an appropriate assessment tool (e.g., glasgow coma scale);
2. list and interpret critical investigations, including
   a. laboratory investigations (e.g., toxin screen, glucose), diagnostic imaging (e.g., computerized tomography, magnetic resonance imaging) and others (e.g., lumbar puncture, electroencephalography);
3. construct an effective initial management plan, including
   a. initiating urgent care (e.g., airway, breathing, circulation) and appropriate empiric treatment as indicated (narcotic/benzodiazepine reversal, glucose);
   b. instituting immediate treatment as required (e.g., antibiotics, anticonvulsants);
   c. referring the patient for specialized care (e.g., neurosurgery), if necessary;
   d. seeking clarification of proxy decision-making while the patient is incapacitated.

58-2
November 2013

Delirium

Rationale

Delirium is a disturbance of cerebral function secondary to an underlying medical condition. Delirium is extremely common in hospitalized patients. The presenting syndrome is altered level of consciousness, impaired cognition and reality testing with a fluctuating course. Delirium is associated with increased risk of death, prolonged hospitalization and institutionalization.

Causal Conditions

1. Medications (e.g., sedative, anti-cholinergic)
2. Metabolic (e.g., fluid and electrolyte disturbance)
3. Hypoxia (e.g., anemia, hypoperfusion)
4. Infection
5. Endocrine (e.g., hypothyroidism)
6. Neurological (e.g., stroke, neurocognitive disorder (dementia), infection)
7. Post-surgical
8. Withdrawal (e.g., alcohol, benzodiazepines)
9. Trauma

Key Objectives

Given a patient with delirium, a candidate will recognize the syndrome, diagnose the cause(s), and will initiate an appropriate management plan. Particular attention should be paid to the urgent/emergent nature of the condition.

Enabling Objectives

Given a patient with delirium, a candidate will

1. list and interpret critical clinical findings, including those derived from
   a. the identification of susceptibility factors for delirium (e.g., age, alcohol dependence, neurocognitive disorder [dementia]);
   b. the use of appropriate diagnostic clinical tools (e.g., mini-mental state examination);
   c. an appropriate history and physical examination, including collateral history from family and caregivers, aimed at eliciting the cause of delirium;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and diagnostic imaging (e.g., blood gases, blood culture, computerized tomography scan);
3. construct an effective initial management plan, including
   a. instituting acute management of underlying conditions, as appropriate;
   b. ensuring appropriate treatment of agitation and sleep disturbance;
   c. managing the environment of the patient to assist in re-orientation and settling;
   d. seeking clarification of proxy decision making while the patient is incapacitated.

58-3
November 2013

Major/Mild Neurocognitive Disorders (Dementia)

Rationale

Neurocognitive disorder (dementia) is a diminution in cognition in the setting of a stable level of consciousness. It is a major issue for families and caregivers, and is increasing in prevalence with the aging population. Alzheimer's disease is by far the most common form of neurocognitive disorder (dementia) in the elderly.

Causal Conditions

1. Alzheimer disease
2. Vascular dementia (e.g., multi-infarct, lacunar infarcts)
3. Brain trauma (e.g., postconcussive, anoxia)
4. Drugs (e.g., alcohol, substance abuse)
5. Toxins (e.g., heavy metals, organic toxins)
6. Neurodegenerative disorders (e.g., Parkinson disease, Lewy Body, Huntington disease)
7. Normal pressure hydrocephalus
8. Intracranial masses (e.g., tumours, subdural masses, brain abscesses)
9. Infections (e.g., human immunodeficiency virus, neurosyphilis)
10. Endocrine, metabolic, and nutritional disorders (e.g., hypothyroid, vitamin B12 deficiency)

Key Objectives

Given a patient with neurocognitive disorder (dementia), the candidate will identify potential causes, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify a deterioration in cognitive function and look for reversible risk factors. The candidate will differentiate early Alzheimer disease from other causes.

Objectives

Given a patient with neurocognitive disorder (dementia), the candidate will

1. list and interpret critical clinical findings, including those based on
   a. a history from the patient and on other collateral information to determine whether cognitive decline has occurred, the time course, and possible risk factors (e.g., drugs, toxins);
   b. a differentiation of true neurocognitive disorder (dementia) from psychiatric disorders (e.g., depression);
   c. the determination of the patient's mental status as well as his results on the mini-mental state examination;
2. list and interpret critical investigations (e.g., thyroid-stimulating hormone, vitamin B12, venereal disease research laboratory);
3. construct an effective initial management plan, including
   a. treatment of reversible underlying conditions;
   b. initiation of appropriate pharmacotherapy (e.g., cholinesterase inhibitors);
   c. patient and family counseling (e.g., prognosis, alternate decision-making and support services);
   d. determination as to whether a referral to specialized services (e.g., occupational therapy, addictions treatment) is

required.

59
November 2004

Mood Disorders

This Objective is no longer applicable. Please use 59-1 Depressed Mood
This Objective is no longer applicable. Please use 59-2 Mania / Hypomania

59-1
November 2013

Depressed Mood

Rationale

Symptoms of depression and/or mood dysregulation are common. Depressed mood can lead to significant impairment or death.

Causal conditions

1. Major depressive disorder
2. Bipolar disorder (type I, type II)
3. Persistent depressive disorder (dysthymia)
4. Cyclothymic disorder
5. Normal grief
6. Substance-induced mood disorder
7. Mood disorder secondary to a general medical condition
8. Adjustment disorder

Key Objectives

Given a patient with depressed mood, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. The candidate should also pay particular attention to assessment of suicide risk and the potential need for urgent care.

Enabling Objectives

Given a patient with symptoms of depressed mood, the candidate will

1. list and interpret critical clinical findings, including
   a. results of an appropriate history, physical examination and assessment of the patient's mental state;
   b. a differential diagnosis based upon differentiation of clinical syndromes presenting with mood dysregulation;
   c. specific risk factors that warrant immediate intervention;
2. list and interpret appropriate investigations, including appropriate laboratory investigations (e.g., toxicology screen, thyroid stimulating hormone);
3. construct an initial management plan including
   a. an assessment of safety (e.g., suicide risk, risk of harm to others);
   b. initiation of appropriate pharmacotherapy, if indicated;
   c. appropriate involvement of family and supportive resources;
   d. determination as to whether a referral for specialized care is required.

59-2
November 2013

Mania / Hypomania

Rationale

Mania/Hypomania is an extremely disabling and potentially harmful behavioral syndrome that indicates an underlying central nervous system disorder. Mania can lead to harm to self or others, and may be accompanied by features of psychosis.

Causal conditions

1. Bipolar disorder (type I, type II)
2. Substance-induced mood disorder
3. Mood disorder due to a medical condition
4. Cyclothymic disorder

Key Objectives

Given a patient presenting with mania/hypomania, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. The candidate should pay particular attention to assessment of risk and the potential need for urgent care.

Enabling Objectives

Given a patient with symptoms of mania/hypomania, the candidate will

1. list and interpret critical clinical findings, including
   a. results of an appropriate history, physical examination and assessment of the patient's mental state;
   b. collateral information, as appropriate;
   c. a differential diagnosis based upon differentiation of clinical syndromes presenting with mania/hypomania;
   d. specific risk factors that warrant immediate intervention;
2. list and interpret appropriate investigations, including appropriate laboratory investigations (e.g., toxicology screen, thyroid stimulating hormone);
3. construct an initial management plan including
   a. an assessment of safety (e.g., suicide risk, risk to others);
   b. initiation of appropriate pharmacotherapy if indicated;
   c. appropriate involvement of family and supportive resources;
   d. determination as to whether referral for specialized care is required.

60
November 2010

Mouth Problems

Rationale

Although many disease states can affect the mouth, a common one is odontogenic infection (dental caries and periodontal infections). Infections, apart from the discomfort inflicted, may result in serious complications. Oral carcinoma is important to rule out.

Causal Conditions

1. Congenital (e.g., cleft palate)
2. Acquired
   a. Infection (e.g., sexually-acquired diseases)
   b. Malignancy (e.g., leukoplakia)
   c. Poor oral hygiene (e.g., caries, periodontal disease)
   d. Trauma (e.g., abuse)
   e. Toxic ingestion
   f. Sialolithiasis
   g. Conditions in elderly (e.g., xerostomia)
3. Other (e.g., oral lesions associated with systemic disease)

Key Objectives

Given a patient with mouth problems, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, In particular, the candidate will determine if the patient requires specialized care.

Enabling Objectives

Given a patient with mouth problems, the candidate will

1. list and interpret critical clinical findings, including
   a. signs of potential malignancy;
   b. signs of infection;
2. list and interpret critical investigations, including
   a. those required to exclude suspected systemic disease;
3. construct an effective initial management plan, including
   a. counsel and educate the patient and/or the caregivers regarding oral hygiene and/or diet (e.g., sugar-containing drinks for children);
   b. counsel regarding smoking cessation and alcohol abuse;
   c. refer the patient for specialized care, if necessary.

61
June 2010

Movement Disorders, Involuntary / Tic Disorders

Rationale

Movement disorders are classified as excessive (hyperkinetic) or reduced (bradykinetic) activity. Diagnosis depends primarily on careful observation of the clinical features.

Causal Conditions

1. Hyperkinetic
   a. Tics
      i. Primary (sporadic and inherited)
         A. Tourette syndrome
         B. Huntington disease
      ii. Secondary
         A. Infections (e.g., encephalitis, Creutzfeldt-Jakob)
         B. Drugs (e.g., stimulants, levodopa)
   b. Dystonia
      i. Primary (sporadic and inherited)
      ii. Dystonia plus syndromes (e.g., medication)
   c. Stereotypies (typically with mental retardation or autism)
   d. Chorea/Athetosis/Ballism
   e. Essential tremor
   f. Myoclonus
2. Bradykinetic
   a. Parkinson disease
   b. Wilson disease
   c. Huntington disease
3. Tremor
   a. Resting (e.g., Parkinson, severe essential)
   b. Intention (e.g., cerebellar disease, multiple sclerosis)
   c. Postural/Action (e.g., enhanced physiologic, essential)

Key Objectives

Given a patient with a movement disorder, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with a movement disorder, the candidate will

1. list and interpret critical clinical findings, including
   a. describe the abnormal movement accurately after careful observation (at rest and in action) to differentiate

between various types and causes of movement disorders;
   b. perform an history and physical examination to look for reversible causes (e.g., medications, Wilson disease);
   c. identify key physical finding characteristic of Parkinson disease (e.g., rigidity, akinesia);
2. list and interpret critical investigations including
   a. testing for Wilson disease, if indicated;
   b. imaging studies or other tests, as appropriate;
3. construct an effective initial management plan, including
   a. initiate medications for common conditions (e.g., essential tremor);
   b. recognize side effects of medication and modify as necessary (e.g., dystonia, "on/off" phenomenon);
   c. determine if the patient requires specialized care for diagnosis or management, including genetic testing or counseling.

Abnormal Heart Sounds and Murmurs

Rationale

Murmurs and abnormal heart sounds may be detected on physical examination. Although systolic murmurs are often "innocent" or physiological, diastolic murmurs are virtually always pathologic. A thorough history and physical examination almost always identifies which patients require further investigation and management.

Causal Conditions

1. Abnormal heart sounds
   a. S1 (e.g., mitral stenosis, atrial fibrillation)
   b. S2 (e.g., hypertension, aortic stenosis)
   c. S3 (e.g., congestive heart failure)
   d. S4 (e.g, hypertension)
   e. Abnormal splitting (e.g., atrial septal defect)
2. Systolic murmurs
   a. Ejection murmurs (e.g., physiologic, aortic stenosis)
   b. Pansystolic murmurs (e.g. mitral regurgitation)
3. Diastolic murmurs
   a. Early (e.g., aortic regurgitation)
   b. Mid-diastolic (e.g., mitral stenosis)
4. Pericardial friction rubs

Key Objectives

Given a patient with a murmur or abnormal heart sound(s), the candidate will differentiate innocent from pathological conditions, diagnose the cause, severity and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with a diastolic murmur, the candidate will

1. list and interpret critical clinical findings, including
   a. the origin of the abnormal sound and/or murmur;
   b. an appropriate history and physical exam aimed at determining the underlying pathological condition, including severity and complications (e.g. congestive heart failure, endocarditis);
2. list and interpret critical investigations, including
   a. diagnose abnormal heart rhythm by means of clinical findings and electrocardiogram;
   b. select diagnostic imaging, including echocardiography, for further investigation of the diastolic murmur;
3. construct an effective initial management plan, including
   a. initiate management for the underlying condition and its complications (e.g., congestive heart failure, atrial fibrillation, endocarditis);
   b. recommend endocarditis prophylaxis, if indicated;

c. determine if the patient requires specialized care.

62-1

Abnormal Heart Sounds and Murmurs

This Objective is no longer applicable. Please use 62 Abnormal Heart Sounds and Murmurs

62-2
September 2009

Heart Sounds (Pathological)

This Objective is no longer applicable. Please use 62 Abnormal Heart Sounds and Murmurs

62-3
September 2009

Systolic Murmur

This Objective is no longer applicable. Please use 62 Abnormal Heart Sounds and Murmurs

63
June 2011

Neck Mass, Goiter, Thyroid Disease

Rationale

The majority of neck masses are benign, but it is important to distinguish those rare ones which are malignant.

Causal Conditions

1. Benign
   a. Congenital (e.g., thyroglossal duct cyst)
   b. Inflammatory (e.g., reactive lymph nodes)
   c. Neoplasms (e.g., lipomas)
2. Malignant
   a. Thyroid
   b. Non-thyroid head and neck cancers
   c. Lymphoma

Key Objectives

Given a patient with a neck mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to excluding malignancy.

Enabling Objectives

Given a patient with a neck mass, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination, paying particular attention to;
      i. risk factors predisposing to malignancy (e.g., smoking);
      ii. time course;
      iii. presence of pain, swallowing or systemic symptoms;
      iv. signs or symptoms of thyroid dysfunction;
2. list and interpret critical investigations, including
   a. recognition that no investigation may be necessary;
   b. investigation of thyroid function;
   c. diagnostic imaging;
3. construct an effective initial management plan, including
   a. reassurance and appropriate follow-up for a suspected benign lesion;
   b. appropriate medical management (e.g., thyroid supplementation, antibiotics;
   c. referral for specialized care (e.g., fine needle aspiration), if necessary.

Neonatal Distress

Rationale

Neonatal distress is a relatively common occurrence. Failure to identify and appropriately manage an infant in distress in a timely manner can potentially lead to significant morbidity and mortality.

Causal Conditions

1. Prematurity
2. Pulmonary (e.g., meconium aspiration, pneumothorax)
3. Decreased respiratory drive (e.g., maternal medications, asphyxia)
4. Cardiovascular (e.g., anemia, congenital heart disease)
5. Infection

Key Objectives

In cases of a neonatal distress, the candidate will be able to assess the need for and initiate resuscitation, identify causal and ongoing pathologies, and determine ongoing needs including whether the infant requires level 2 or level 3 neonatal intensive care.

Enabling Objectives

In cases of neonatal distress, the candidate will

1. list and interpret critical clinical findings, including
   a. physical signs and symptoms that necessitate immediate resuscitation;
   b. maternal and perinatal history;
   c. physical examination findings relevant to formulating a differential diagnosis;
2. list and interpret critical initial investigations targeted towards identifying an underlying cause (e.g., cord blood gas, blood glucose)
3. construct an effective initial management plan, including
   a. neonatal resuscitation;
   b. elements of ongoing supportive care, including;
      i. thermoregulation;
      ii. fluid and electrolyte balance;
      iii. sepsis management;
      iv. cardiorespiratory support;
   c. appropriate communication with caregiver(s);
   d. appropriate consultation or referral.

65
November 2004

Non-reassuring Fetal Status (Fetal Distress)

This Objective is no longer applicable. Please use 80-1 Prenatal Care or 80-2 Intrapartum and Postpartum Care

Numbness / Tingling / Altered Sensation

Rationale

Patients will often present complaining only of altered sensation. There are varying underlying causes, some of which are serious.

Causal Conditions

1. Peripheral neuropathy (e.g., diabetic neuropathy, carpal tunnel syndrome, radiculopathy)
2. Central nervous system (e.g., multiple sclerosis)
3. Dermatological (e.g., herpes zoster, angioedema)
4. Mental disorders (e.g., panic attacks)

Key Objectives

Given a patient presenting with isolated numbness/tingling/altered sensation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with numbness/tingling/altered sensation, the candidate will

1. list and interpret critical clinical findings, including
   a. history data relevant to potential underlying causes (e.g., diabetic risk factors, workplace risk factors, distribution of symptoms);
   b. results of a physical examination including a thorough neurological examination;
   c. recognition of the fact that in many such cases investigations may not be required;
2. list and interpret appropriate investigations (e.g., fasting glucose, nerve conduction studies)
3. construct an effective initial management plan based on the working diagnosis, including
   a. providing appropriate continuing assessment and ongoing care;
   b. determining if the patient requires specialized care;
   c. advising the patient, if necessary, on work-related issues.

67
November 2004

Pain

This Objective is no longer applicable. Please use 67-1-2-1 Generalized Pain Disorder

67-1-2-1
November 2013

Generalized Pain Disorders

Rationale

Complaints of non-articular generalized pain are common, often chronic and can be difficult to manage.

Causal Conditions

1. Fibromyalgia / Chronic fatigue syndrome
2. Polymyalgia rheumatica (PMR)
3. Mental health disorders (e.g., depression, somatic symptom disorders)

Key Objectives

Given a patient with a generalized pain disorder, the candidate will differentiate articular from non-articular pain, diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with generalized pain disorder, the candidate will

1. list and interpret critical clinical findings, including
   a. findings on history and physical examination which
      i. differentiate fibromyalgia from other generalized pain syndromes and specific articular disease;
      ii. suggest other pain syndromes which may be associated with serious complications;
         A. PMR and temporal arteritis;
         B. Depression and suicide;
2. list and interpret appropriate investigations (e.g., erythrocyte sedimentation rate, temporal artery biopsy), including
   a. recognizing that many generalized pain disorders are associated with normal investigations;
3. construct an effective initial management plan appropriate for the working diagnosis, including
   a. when appropriate, take a multi-disciplinary approach (e.g., fibromyalgia);
   b. determine if the patient requires specialized care.

67-1-2-2
November 2004

Local Pain, Shoulder/Elbow/Wrist/Hand

This Objective is no longer applicable. Please use 109-16 Fractures and Dislocations

67-1-2-3
November 2004

Local Pain, Hip/Knee/Ankle/Foot

This Objective is no longer applicable. Please use 109-16 Fractures and Dislocations

67-1-2-4
November 2004

Local Pain, Spinal Compression/Osteoporosis

This Objective is no longer applicable. Please use 109-16 Fractures and Dislocations

67-1-2-5
November 2004

Local Pain, Spine/Neck/Thoracic

This Objective is no longer applicable. Please use 109-16 Fractures and Dislocations

67-1-2-6
November 2004

Local Pain, Spine/Low Back Pain

This Objective is no longer applicable. Please use 109-16 Fractures and Dislocations

67-2
November 2004

Neuropathic Pain

see Sympathetic Pain/Complex Regional Pain Syndrome/Reflex Sympathetic Dystrophy
see Central/Peripheral Neuropathic Pain

67-2-1
November 2010

Sympathetic / Complex Regional Pain Syndrome/Reflex Sympathetic Dystrophy

Rationale

Regional pain and sensory changes may follow an injury or vascular event. A delay in diagnosis and treatment may potentially result in a severe and disabling condition.

Causal Conditions

1. Regional trauma
2. Myocardial infarction
3. Diabetes
4. Stroke
5. Idiopathic

Key Objectives

Given a patient with complex regional pain syndrome, the candidate will diagnose the cause (if identifiable), severity, and complications, and will initiate an appropriate management, in particular making an early diagnosis.

Enabling Objectives

Given a patient with complex regional pain syndrome, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history, including the inciting event (if present);
   b. an appropriate physical examination;
   c. recognition that the diagnosis is usually clinical;
2. list and interpret possible investigations (e.g., plain radiographs)
3. construct an effective initial management plan, including
   a. early mobilization and education;
   b. analgesia (e.g., medications, nerve block);
   c. timely referral for specialized and/or interdisciplinary care.

67-2-2
November 2010

Central/Peripheral Neuropathic Pain

Rationale

Neuropathic pain is a common and often disabling symptom with many underlying causes. Various treatment options exist. Failure to diagnose and treat early may result in greater disability. It may be the initial presentation of a potentially serious underlying medical condition

Causal Conditions

1. Metabolic (e.g., diabetic neuropathy)
2. Nerve entrapment (e.g., carpal tunnel syndrome, lymphoma, trigeminal neuralgia)
3. Infectious (e.g., post-herpetic neuralgia)
4. Central (e.g., phantom limb pain, spinal cord injuries)
5. Sympathetic (e.g., reflex sympathetic dystrophy)

Key Objectives

Given a patient with neuropathic pain, the candidate will diagnose the cause, severity and complications, and will initiate appropriate management.

Enabling Objectives

Given a patient with neuropathic pain, the candidate will

1. list and interpret critical clinical findings, including a thorough history and physical examination to
   a. thoroughly review the pain history (including past treatments), and psychosocial and functional impairment;
   b. identify signs of vascular insufficiency;
   c. investigate for underlying medical conditions (e.g., lymphoma);
2. list and interpret possible appropriate investigations, including
   a. screening investigations for underlying medical conditions (e.g., fasting glucose, chest X-ray);
   b. nerve conduction studies;
   c. vascular studies;
3. construct an effective initial management plan, including
   a. a discussion regarding possible pharmacotherapeutic options;
   b. counseling (e.g., chronicity of symptoms, exercise, activity modification);
   c. optimal treatment of any underlying medical conditions (e.g., diabetic management);
   d. determination as to whether the patient needs a referral to a pain clinic or pain specialist.

68
June 2010

Palpitations

Rationale

Palpitations are sensations of a rapid or irregular heartbeat. Palpitations are a common symptom and although the cause is often benign, it may indicate the presence of a serious underlying problem.

Causal Conditions

1. Supraventricular
   a. Sinus tachycardia
      i. Increased demand (e.g., pregnancy, anemia)
      ii. Metabolic (e.g., thyrotoxicosis, pheochromocytoma)
      iii. Anxiety
      iv. Pharmacologic (e.g., cocaine, caffeine)
   b. Atrial fibrillation/flutter
   c. Supraventricular tachycardia (atrioventricular nodal reentrant tachycardia), Wolff-Parkinson-White syndrome
   d. Junctional tachycardia
   e. Premature junctional complexes and premature atrial contractions
2. Ventricular
   a. Ventricular tachycardia
   b. Premature ventricular contractions
   c. Ventricular fibrillation

Key Objectives

Given a patient with palpitations, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will select patients in need of urgent treatment and differentiate palpitations due to intrinsic heart disease from those that are a manifestation of anxiety, physical exertion, or of another systemic disease.

Enabling Objectives

Given a patient with palpitations, the candidate will

1. list and interpret critical clinical findings, including
   a. perform a history and physical examination to determine the cardiac rate and rhythm and the hemodynamic stability of the patient;
   b. identify underlying precipitants of the cardiac arrhythmia;
2. list and interpret critical investigations, including
   a. electrocardiogram and Holter monitoring;
   b. appropriate investigations for underlying causes of the cardiac arrhythmia (e.g., echocardiogram, thyroid stimulating hormone);
3. construct an effective initial management plan, including

a. immediate medical management in case of hemodynamic instability;
b. anticoagulation for stroke prevention, if indicated;
c. determination as to whether the patient requires hospitalization and specialized care;
d. reassuring the patient with a benign condition.

69
November 2013

Anxiety

Rationale

Excessive anxiety is a common problem in both the primary care and hospital settings. It is often co-morbid with other medical conditions, and can be the presenting feature of an underlying medical condition (e.g., hyperthyroidism). When severe, it can be associated with life-threatening complications (e.g., suicide).

Causal Conditions

Anxiety disorders are caused by a complex interaction of biological (e.g., genetic, substance use), social (e.g., domestic violence), and psychological factors (e.g., uncertainty). They frequently co-exist with other psychiatric (as well as medical) conditions, but may present in isolation. Common anxiety disorders include:

1. Generalized anxiety disorder
2. Post-traumatic stress disorder
3. Separation anxiety disorder
4. Phobias
5. Panic disorder
6. Adjustment disorder

Key Objectives

Given a patient with anxiety, the candidate will diagnosis the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with anxiety, the candidate will

1. list and interpret critical clinical findings, including an appropriate history and physical examination in order to
   a. differentiate situational stress from a true anxiety disorder;
   b. rule out an underlying medical condition as the cause of the anxiety (e.g., adrenal tumors);
   c. identify possible co-morbid conditions (e.g., substance-related or addictive disorder);
   d. determine the severity of symptoms and assess for the presence of life threatening features (e.g., suicidal ideation);
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations based upon clinical findings (e.g., toxicology screen);
3. construct an effective initial management plan, including
   a. ensuring the safety of the patient and others;
   b. treating the anxiety disorder using appropriate pharmacological, environmental (e.g., hospitalization), psychologic (e.g., psychotherapies) interventions;
   c. treating any underlying medical and/or co-morbid conditions if appropriate;
   d. providing support to family and/or caregivers;

e. referring the patient for specialized care, if necessary.

70
November 2004

Pap Smear Screening

This Objective is no longer applicable.

71
November 2004

Pediatric Emergencies - Acutely Ill Infant/Child

This Objective is no longer applicable. Please use Crying/Fussing Child 71-1 or Hypotonia/Floppy Infant/Child 71-2

71-1
June 2010

Crying or Fussing Child

Rationale

While it is common for children to cry/fuss, it is important to distinguish between benign and organic causes of crying/fussing in an infant or child.

Causal Conditions

1. Functional (e.g., hunger, irritability)
2. Colic
3. Trauma
4. Illness

Key Objectives

Given a crying or fussing infant or child, the candidate will diagnose the cause, severity, and complications of the underlying problem, and will initiate an appropriate management plan. In particular, the candidate will differentiate pediatric emergencies from conditions not requiring emergency treatment.

Enabling Objectives

Given an infant/child who is crying and fussing, the candidate will

1. list and interpret critical clinical findings, including
   a. elicit a history of patient's previous behavior, sleep pattern, oral intake, associated symptoms (e.g., fever, pain);
   b. perform a full physical examination in order to determine whether the child is sick or not;
2. list and interpret critical investigations, including
   a. investigations for any suspected underlying disease or trauma;
3. construct an effective initial management plan, including
   a. counsel caregivers if the fussy or crying child does not have an organic disease;
   b. determine if the child requires follow-up for additional investigation and management;
   c. determine if the patient needs a referral, either immediate or elective.

71-2
November 2010

Hypotonic Infant

Rationale

Hypotonia in an infant can be an indication of severe systemic disease requiring urgent intervention, or neurological disease potentially requiring long-term multidisciplinary care.

Causal Conditions

1. Neurologic (e.g., perinatal asphyxia, spinal muscular atrophy, myasthenia gravis)
2. Disorders of skeletal muscle (e.g., muscular dystrophy)
3. Genetic/metabolic (e.g., Prader-Willi, hypothyroidism)
4. Systemic illness (e.g., sepsis, dehydration)

Key Objectives

The candidate will recognize hypotonia in an infant as a finding requiring urgent attention. Considering the presence or absence of other clinical findings, the candidate will formulate an appropriate differential diagnosis, assess the severity of the condition, and will initiate an appropriate management plan.

Enabling Objectives

Given a hypotonic infant, the candidate will

1. list and interpret critical clinical findings, including
   a. assessment of physiologic stability (e.g., oxygenation, cardiovascular function);
   b. a thorough history including a perinatal history;
   c. a complete physical examination, including a detailed neurological and musculoskeletal examination;
2. list and interpret critical investigations appropriate to the clinical condition, which may include
   a. urgent investigations relevant to an acutely ill infant (e.g., electrolytes, blood glucose, arterial blood gas);
   b. diagnostic investigations (e.g., computerized tomography scan, creatine kinase, eletromyogram, genetic studies);
3. construct an effective initial management plan, including:
   a. immediate supportive care (when required);
   b. supportive communication with family;
   c. referral for specialized care, if necessary.

Pelvic Mass

Rationale

Pelvic masses are common and may be found in a woman of any age, although the possible etiologies differ among age groups. There is a need to diagnose and investigate them since early detection may affect outcome.

Causal Conditions

1. Gynecologic
   a. Ovary
      i. Functional cysts (follicular, corpus lutein cysts, theca lutein cysts)
      ii. Hyperplastic (polycystic ovary, endometriosal cyst)
      iii. Neoplastic
         A. Serous cystadenoma/Carcinoma
         B. Mucinous cystadenoma/Carcinoma
         C. Thecomas/Granulosa cell tumors
         D. Fibromas
         E. Germ cell tumors (cystic teratoma, teratoma, gonadoblastoma, dysgerminoma)
   b. Tube (salpinx)
      i. Ectopic pregnancy
      ii. Congenital (mesonephric and paramesonephric cysts)
      iii. Inflammation, cysts (mesonephric, paramesonephric)
   c. Uterus
      i. Pregnancy
      ii. Hematometria/Pyometria
      iii. Leiomyoma/Adenomyoma
      iv. Sarcoma
2. Non-gynecologic (bowel, bladder, renal ectopia, other)

Key Objectives

- Determine whether the patient may be pregnant, then whether the mass is gynecologic, and its anatomical origin (ovary, tube, or uterus).

Objectives

- Through efficient, focused, data gathering:
  - Elicit a history including menstrual, fertility, and obstetrical history, sexual activity, and associated symptoms.
  - Perform abdominal and pelvic examination including speculum exam.
  - Describe features suggestive of androgenization in the reproductive age and androgenization/estrogenization in the pre-pubertal age group.
- List and interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - List blood tumor markers (and their reliability) if malignancy is suspected.

- List indications for pregnancy test and/or cultures; list indications for endometrial biopsy.
- Select appropriate diagnostic imaging for mass.

- Conduct an effective initial plan of management for a patient with a pelvic mass:
  - Outline management of functional ovarian cysts; outline management of tubo-ovarian abscess.
  - Outline management options for uterine leiomyomata and provide counseling for patients.
  - Select patients in need of specialized care.

73
June 2010

Pelvic Pain

Rationale

Acute pelvic pain may be secondary to a life-threatening condition. Chronic pelvic pain is one of the most common problems in gynecology.

Causal Conditions

1. Pregnancy related (e.g., ectopic, molar, abruption)
2. Gynecological
   a. Ovary (e.g., ruptured cyst, torsion)
   b. Tube (e.g., pelvic inflammatory disease, endometriosis)
   c. Uterus (e.g., leiomyoma, endometriosis)
3. Other (dysmenorrhea, ovulation pain, dyspareunia)
4. Systemic conditions
   a. Urologic (interstitial cystitis, renal colic)
   b. Musculoskeletal (fibromyalgia)
   c. Gastrointestinal (irritable bowel, diverticulitis, inflammatory bowel disease, hernias)
5. Mental health issues
   a. Depression, somatization
   b. Sexual, physical, and psychological abuse/domestic violence

Key Objectives

Given a female patient with pelvic pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify patients with acute pain caused by a life-threatening condition, will determine whether pregnancy is likely, and will provide stabilization for those patients who are hemodynamically unstable.

Enabling Objectives

Given a female patient who presents with pelvic pain, the candidate will

1. list and interpret critical clinical findings, including
   a. determine if the patient requires urgent stabilization;
   b. perform a history and physical exam to determine the underlying cause (e.g., menstrual history, pelvic and speculum exam);
2. list and interpret relevant investigations, including
   a. a pregnancy test, if indicated;
   b. appropriate diagnostic imaging testing (e.g., pelvic ultrasound);
3. construct an effective initial management plan, including
   a. stabilization of the patient and consideration of need for emergency surgery;
   b. appropriate treatment of the underlying condition (e.g., dysmenorrhea, pelvic inflammatory disease);

c. recommending appropriate non-pharmacologic and pharmacologic treatment for chronic pelvic pain;
d. counseling the patient regarding the prevention of sexually transmitted infections;
e. determining whether the patient requires specialized or urgent gynecologic care.

74
June 2010

Periodic Health Examination (PHE)

Rationale

The period health examination (PHE) represents an opportunity for the prevention or early detection of health-related problems. The nature of the examination will vary depending on the age, sex, occupation, and cultural background of the patient.

Conditions to consider based on patient age

1. All ages
   a. Injury prevention (e.g., noise control, seat belts, bicycle helmets)
   b. Lifestyle modification (e.g., physical activity, smoking prevention/cessation, sun exposure)
   c. Immunization
2. Infant and child
   a. Nutrition, growth, development
   b. Abuse/neglect
   c. Other (e.g., hearing, amblyopia)
3. Adolescence
   a. Substance abuse
   b. Sexual activity (e.g., contraception, sexually transmitted infections [STI])
4. Young adult
   a. Female reproductive health (e.g., Papanicolaou smear, STI screening, folic acid)
   b. Occupational health issues (e.g., stress, exposures)
5. Middle-aged adult
   a. Cardiovascular health risks (e.g., blood glucose, blood pressure, lipid profile)
   b. Cancer screening (e.g., breast, colon, prostate, skin)
   c. Osteoporosis
   d. Occupational health issues (e.g., stress, exposures)
6. Older adult
   a. Fracture and fall prevention (e.g., osteoporosis screening)
   b. Nutrition
   c. Elder abuse
   d. Dementia screening

Key Objectives

Given a patient presenting for a PHE, the candidate will determine the patient's risks for age and sex-specific conditions to guide the history, physical examination, and laboratory screening.

Enabling Objectives

Given a patient presenting for a PHE, the candidate will

1. perform an appropriate history and physical examination based on the patient's age, sex, and background;
2. list and interpret appropriate investigations, including
   a. evidence-based screening investigations specific to age and sex concerns (e.g., fasting glucose for greater than 40 years, mammography for greater than 50 years);
3. construct an effective initial management plan, including
   a. communicate effectively with the patient to reach common ground regarding goals related to disease prevention and risk reduction;
   b. recommend proven prevention strategies (e.g., smoking cessation, regular exercise);
   c. incorporate the periodic health examination principles in the care of a patient with a chronic disease.

74-1
November 2010

Newborn Assessment

Rationale

Primary care physicians play a vital role in identifying children at risk for disorders that are threatening to life or long-term health before they become symptomatic. In most cases, caregivers require reassurance and anticipatory guidance regarding the health of their newborn infant.

Key Objectives

Given a newborn presenting for routine assessment the candidate will conduct a skilled and comprehensive assessment to identify any significant abnormalities or risk factors and counsel caregiver(s) on newborn care.

Enabling Objectives

Given a newborn for routine assessment, the candidate will

1. list and interpret critical clinical findings, including
   a. maternal and perinatal history (e.g., intrapartum fever, medications);
   b. neonatal history (e.g., Apgar scores, feeding and elimination);
   c. psychosocial history (e.g., maternal mental health, home environment, family supports);
   d. systematic newborn physical examination, with particular attention to indications of an acute illness (e.g., jaundice, hydration status);
   e. screening for important congenital malformations (e.g., red reflex, heart murmur);
   f. caregiver(s)' concerns;
2. list and interpret critical investigations, including
   a. screening tests for acute illness (e.g., serum glucose);
   b. screening tests for clinical abnormalities (e.g., echocardiogram, genetic testing);
   c. bilirubin measurement;
3. construct an effective initial management plan, including
   a. manage any acute illness appropriately, including referral for specialized care if needed;
   b. counsel caregiver(s) regarding breastfeeding and infant nutrition;
   c. counsel caregiver(s) about routine infant care (e.g., umbilical cord care) and safety (e.g., car seat, prevention of sudden infant death syndrome);
   d. address any parental concerns;
   e. discuss with caregiver(s) newborn metabolic screening.

74-2
November 2010

Infant and Child Immunization

Rationale

Immunization has reduced or eradicated many infectious diseases and has improved overall world health. Recommended immunization schedules are constantly updated as new vaccines become available.

Key Objectives

Given an infant or child presenting to a physician, the candidate will be able to recommend an appropriate schedule of vaccinations, and discuss with parents the risks and benefits of vaccination. Will be able to identify infants or children in need of vaccination who do not present for routine well baby visits (e.g., when presenting for assessment of new illness).

Enabling Objectives

Given an infant or child needing vaccination, the candidate will

1. list and interpret clinical findings, including
   a. obtain an immunization history and determine whether the child (or family member) has any contraindication to receiving vaccination (e.g., anaphylaxis, immunosuppression);
2. construct an effective initial management plan, including
   a. obtain informed consent;
   b. give parents the information needed to manage possible vaccine reactions;
   c. outline an appropriate vaccination schedule, including modifications to the usual schedule of immunization for special circumstances (e.g., catch-up schedules, immunocompromised children);
   d. counsel parents who refuse vaccination for their children;
   e. report adverse immunization reactions as required.

74-3
June 2010

Pre-operative Medical Evaluation

Rationale

Evaluation of patients prior to surgery is an important element of comprehensive medical care. The objectives of such an evaluation include the detection of an unidentified disease that may increase the risk of surgery and how to minimize such risk.

Causal Conditions

1. Optimal care of chronic diseases (e.g., coronary artery disease, diabetes mellitus)
2. Identification of perioperative risk
   a. Cardiopulmonary
      i. Myocardial (e.g., ischemia, heart failure, arrhythmia)
      ii. Pulmonary (e.g., chronic obstructive pulmonary disease, infection)
   b. Anaesthesic
      i. Systemic (e.g., malignant hyperthermia, sleep apnea)
      ii. Intubation/airway (e.g., C-spine stability)
   c. Thromboembolic (prior deep vein thrombosis, thrombophilia)
   d. Medication-related (e.g., prednisone use, immunosuppressants)

Key Objectives

Given a patient who requires surgery, the candidate will assess the perioperative issues based on the history and physical examination. In particular, the candidate will recommend strategies to minimize perioperative morbidity and mortality.

Objectives

Given a patient who requires surgery, the candidate will

1. list and interpret key clinical findings, including
   a. determine current functional capacity of the patient and prior anesthetic history;
   b. perform a history and physical examination to allow classification of perioperative risk and to optimize the patient's care (e.g., full medication list, cardiovascular examination);
2. list and interpret appropriate clinical investigations, including
   a. required investigations based upon risks identified from the history and physical examination (e.g., C-spine X-ray in rheumatoid arthritis, hemoglobin A1c [HbA1c], diabetes);
   b. investigations for further risk stratification (cardiac stress testing, sleep study), if necessary;
3. construct an effective management plan, including
   a. optimization of the care of pre-existing medical conditions (e.g., diabetes);
   b. communicate the perioperative risks to the patient and other health professionals;
   c. communicate to the patient and other health professionals required medication changes around the time of surgery (e.g., stopping anticoagulants, deep vein thrombosis prophylaxis).

74-4
February 2014

Work-related Health Issues

This Objective has been renumbered. Please use 78-8 Work-related Health Issues

75
November 2013

Personality Disorders

Rationale

Personality disorders are pervasive and maladaptive patterns of behavior exhibited over a wide variety of social, cultural, occupational, and relationship contexts and leading to distress and impairment. They represent important risk factors for a variety of medical, interpersonal, and psychiatric difficulties.

Causal condition

The emergence of a personality disorder is a complex interaction of biological (e.g., genetic), social (e.g., poverty), and psychological factors (e.g., stress).

Key Objectives

Given a patient with a personality disorder, the candidate will differentiate between a personality disorder and other mental illness, recognizing the high prevalence of co-morbidities. The candidate will formulate an appropriate management plan.

Objectives

Given a patient with a personality disorder, the candidate will

1. list and interpret critical clinical findings, including
   a. sufficient clinical information (e.g., mental status examination) to diagnose the type of personality disorder;
   b. risk factors associated with personality disorders (e.g., suicidal ideation, substance use);
   c. any co-existing psychiatric conditions (e.g., mood disorder);
2. construct an effective initial management plan, including
   a. proper management in the case of a patient requiring immediate intervention (e.g., suicide risk, risk to others);
   b. judicious use of pharmacotherapy, with consideration of the risk for abuse or overdose;
   c. referral for mutli-disciplinary and/or specialized care, if necessary.

76
November 2013

Pleural Effusion

Rationale

Pleural effusions are common and may represent local or systemic disease. An organized approach including assessment of pleural fluid usually leads to a correct diagnosis.

Causal Conditions

1. Transudative (e.g., congestive heart failure, nephrotic syndrome, cirrhosis)
2. Exudative
   a. Infectious causes (e.g., parapneumonic, empyema, tuberculosis)
   b. Neoplastic causes (e.g., primary, metastatic, mesothelioma)
   c. Cardiac/Vascular (e.g., pulmonary embolus, collagen vascular disease)
   d. Gastrointestinal causes (e.g., ruptured esophagus, pancreatitis, chylothorax)

Key Objectives

Given a patient with pleural disease, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should be able to differentiate between causes of pleural effusion on the basis of pleural fluid analysis.

Enabling Objectives

Given a patient with pleural disease, the candidate will

1. list and interpret critical clinical findings, including
   a. a. results of a history and physical examination aimed at determining whether the patient has one of the edema states such as heart failure, has evidence of an infectious or neoplastic disease, or relevant workplace exposure;
2. list and interpret critical clinical investigations, including
   a. findings of a chest X-ray and identification of indications for thoracentesis;
   b. findings of a thoracentesis;
   c. computed tomography scanning, if indicated;
3. construct an effective initial management plan, including
   a. initiateing medical management for underlying conditions (e.g., congestive heart failure, pneumonia);
   b. considering other treatment options (e.g., therapeutic thoracentesis, chest tube insertion) if the patient is refractory to conventional treatments;
   c. determining whether the patient requires specialized care (e.g., thoracic surgery for empyema).

77
November 2013

Poisoning

Rationale

Poisoning is common and potentially fatal. It can be accidental or intentional. Accidental poisoning is particularly common in children.

Causal Conditions

1. Common
   a. Household or work items (e.g., cleaning substances, or other chemical products, cosmetics, plants)
   b. Anticholinergics (e.g., antihistamines, tricyclics)
   c. Sympathomimetic (e.g., cold remedies, amphetamines, cocaine)
2. Depressants (e.g., alcohol, opiate, sedatives, hypnotics)
   a. Cholinergics (e.g., insecticides, nicotine)
3. Serotonergics (e.g., selective serotonin reuptake inhibitors)
4. Analgesics (e.g., acetylsalicylic acid [ASA], acetaminophen)
5. Cardiovascular drugs (e.g., digoxin, B-blopckers, calcium channel blockers)
6. Others (e.g., hallucinogens)

Key Objectives

Given a patient with poisoning, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to determining the nature of the toxicity and exposure and provide specific and supportive care based on the identified cause.

Enabling Objectives

Given a patient with poisoning, the candidate will

1. list and interpret critical clinical findings, including
   a. collateral history aimed at determining the substance involved and the potential severity of the poisoning;
   b. results of a physical examination aimed at determining the stability of the patient and the nature of the toxidrome (e.g., cholinergic crisis, serotonergic syndrome);
2. list and interpret critical investigations, including
   a. laboratory diagnosis of the substance ingested (e.g., acetaminophen, ASA levels);
   b. assessment of the toxic effects on the patient (e.g., arterial blood gases, anion and osmolar gaps);
3. construct an effective initial management plan, including
   a. supportive care before or at the same time as data gathering and investigation, (e.g., ensuring airway adequacy, hemodynamic stability);
   b. appropriate decontamination or prevention of further absorption (e.g., activated charcoal);
   c. administration of specific antidotes, if indicated (e.g., naloxone, N-acetylcysteine);
   d. further elimination of the poison (e.g., alkalinization, dialysis);
   e. contacting Poison Control;

f. referral for psychiatric assessment, if indicated.

78

Population Health and Its Determinants

This Objective is no longer applicable. Please use Concepts of Health and Its Determinants 78-1
or Assessing and Measuring Health Status at the Population Level 78-2
or Interventions at the Population Level 78-3
or Administration of Effective Health Programs at the Population Level 78-4
or Outbreak Management 78-5
or Environment 78-6
or Health of Special Populations 78-7
or Work-Related Health Issues 78-8

78-1
December 2012

Concepts of Health and Its Determinants

Population Health

Rationale

Concepts of health, illness, disease and the socially defined sick role are fundamental to understanding the health of a community and to applying that knowledge to the patients that a physician serves. With advances in care, the aspirations of patients for good health have expanded and this has placed new demands on physicians to address issues that are not strictly biomedical in nature. These concepts are also important if the physician is to understand health and illness behavior.

Key Objectives

Define and discuss the concepts of health, wellness, illness, disease and sickness.

Describe the determinants of health and how they affect the health of a population and the individuals it comprises.

Enabling Objectives

- As defined by Health Canada and the World Health Organization:
  - discuss alternative definitions of health;
  - describe the determinants of health. These include:
    - Income and Social Status
    - Social Support Networks
    - Education and Literacy
    - Employment and Working Conditions
    - Social and Work Environments
    - Physical Environments
    - Personal Health Practices and Coping Skills
    - Healthy Child Development
    - Biology, Genetics and Epigenetics
    - Health Services
    - Gender
    - Culture
- Discuss the concept of life course, natural history of disease, particularly with respect to possible public health and clinical interventions.
- Describe the concept of illness behavior and the way this affects access to health care and adherence to therapeutic recommendations.
- Discuss how culture and spirituality influence health and health practices, and how they are related to other determinants of health.

78-2
December 2012

Assessing and Measuring Health Status at the Population Level

Population Health

Rationale

Knowing the health status of the population allows for better planning and evaluation of health programs and tailoring interventions to meet patient/community needs. Physicians are also active participants in disease surveillance programs, encouraging them to address health needs in the population and not merely health demands.

Key Objectives

- Describe the health status of a defined population.
- Measure and record the factors that affect the health status of a population with respect to the principles of causation.

Enabling Objectives

- Know how to access and collect health information to describe the health of a population:
  - Describe the types of data and common components (both qualitative and quantitative) used in creating a community health needs assessment.
  - Be aware of important sources of clinical / population-level health data and recognise the advantages and disadvantages of each of them.
  - Critically evaluate possible sources of data to describe the health of a population including the importance of accurate coding and recording of health information.
  - Describe the uncertainty associated with capturing data on the number of events and populations at risk.
  - Understand surveillance systems and the role of physicians and public health in reporting and responding to disease.
- Analyze population health data using appropriate measures:
  - Apply the principles of epidemiology in analyzing common office and community health situations.
  - Describe the concepts of, and be able to calculate, incidence, prevalence, attack rates, case fatality rates and to understand the principles of standardization.
  - Discuss different measures of association including relative risk, odds ratios, attributable risk and correlations.
- Interpret and present the analysis of health status indicators:
  - Demonstrate an ability to use practice-based health information systems to monitor the health of patients and to identify unmet health needs.
  - Understand the appropriate use of different graphical presentations of data.
  - Describe criteria for assessing causation.
  - Demonstrate an ability to critically appraise and incorporate research findings with particular reference to the following elements:
    - characteristics of study designs (RCT, cohort, case-control, cross sectional);
    - measurement issues (validity, sensitivity, specificity, positive predictive value, negative predictive value; bias, confounding; error, reliability);
    - measures of health and disease (incidence and prevalence rates, distributions; measures of central tendency) and sampling.
  - Apply the principles of epidemiology by accurately discussing the implications of the measures.

78-3
December 2012

Interventions at the Population Level

Population Health

Rationale

Many interventions at the individual level must be supported by actions at the community level. Physicians will be expected to advocate for community wide interventions and to address issues that occur to many patients across their practice.

Key Objectives

- Understand the three levels of prevention (primary, secondary and tertiary).
- Describe strategies for community needs assessments, health education, community engagement and health promotion.
- Appreciate the role that physicians can play in promoting health and preventing diseases at the individual and community level (e.g. prevention of low birth weight, immunization, obesity prevention, smoking cessation, cancer screening, etc.).
- Understand how public policy can influence population-wide patterns of behaviour and affect the health of a population.

Enabling Objectives

- Be able to both define the concept of levels of prevention at the individual (clinical) and population levels, as well as formulate preventive measures into their clinical management strategies.
- Name and describe the common methods of health protection (such as agent-host-environment approach for communicable diseases, and source-path-receiver approach for occupational/environmental health).
- Describe the importance and impact of good, culturally-appropriate communication with the patient, the patient's family and, if necessary, the community as a whole with regard to risk factors and their modification.
- Apply the principles of screening and be able to evaluate the utility of a proposed screening intervention, including being able to discuss the potential for lead-time bias and length-prevalence bias.
- Understand the importance of disease surveillance in maintaining population health and be aware of approaches to surveillance.
- Identify ethical issues with the restricting of individual freedoms and rights for the benefit of the population as a whole (e.g., issues in designating non-smoking areas or restricting movements of person with active tuberculosis).
- Describe the advantages and disadvantages of identifying and treating individuals versus implementing population-level approaches to prevention.
- Describe the five strategies of health promotion as defined in the Ottawa Charter and apply them to relevant situations.
- Describe one or more models of behavior change, including predisposing, enabling and re-enforcing factors.
- Identify the potential community, social, physical, environmental factors and work practices that might promote healthy behaviors, as well as ways to assist communities and others to address these factors.
- Be aware of the role of, and work collaboratively with, community and social service agencies (e.g., schools, occupational therapists, municipalities, non-governmental and other agencies).
- Demonstrate awareness of the contribution of allied professionals such as social workers in addressing population health issues.
- Be able to describe the health impact of community-level interventions to promote health and prevent disease.
- Describe examples of public policies which have had an effect on population health.

78-4
December 2012

Administration of Effective Health Programs at the Population Level

Population Health

Rationale

Knowing the organization of the health care and public health systems in Canada as well as how to determine the most cost-effective interventions are becoming key elements of clinical practice. Physicians also must work well in multidisciplinary teams within the current system in order to achieve the maximum health benefit for all patients and residents.

Key Objectives

- Know and understand the pertinent history, structure and operations of the Canadian health care system.
- Be familiar with economic evaluations such as cost-benefit / cost effectiveness analyses as well as issues involved with resource allocation.
- Describe the approaches to assessing quality of care and methods of quality improvement.

Enabling Objectives

- Describe at a basic level:
  - methods of regulation of the health professions and health care institutions;
  - supply, distribution and projections of health human resources;
  - health resource allocation;
  - organization of the Public Health system; and
  - the role of complementary delivery systems such as voluntary organizations and community health centres.
- Describe the role of regulated and non-regulated health care providers and demonstrate how to work effectively with them.
- Outline the principles of and approaches to cost containment and economic evaluation.
- Describe the main functions of public health related to population health assessment, health surveillance, disease and injury prevention, health promotion and health protection.
- Demonstrate an understanding of ethical issues involved in resource allocation.
- Define the concepts of efficacy, effectiveness, efficiency, coverage and compliance and discuss their relationship to the overall effectiveness of a population health program.
- Be able to recognize the need to adjust programs in order to meet the needs of special populations such as new immigrants or persons at increased risk.
- Participate effectively in and with health organizations, ranging from individual clinical practices to provincial organizations, exerting a positive influence on clinical practice and policy-making.
- Define quality improvement and related terms: quality assurance, quality control, continuous quality improvement, quality management, total quality management; audit.
- Describe and understand the multiple dimensions of quality in health care, i.e. what can and should be improved.

78-5
December 2012

Outbreak Management
Population Health

Rationale

Physicians are crucial participants in the control of outbreaks of disease. They must be able to diagnose cases, recognize outbreaks, report these to public health authorities and work with authorities to limit the spread of the outbreak. A common example includes physicians working in nursing homes and being asked to assist in the control of an outbreak of influenza or diarrhea.

Key Objectives

- Know the defining characteristics of an outbreak and how to recognize one when it occurs.
- Demonstrate essential skills involved in controlling an outbreak and its impact on the public, in collaboration with public health authorities as appropriate.

Enabling Objectives

- Define an outbreak in terms of an excessive number of cases beyond that usually expected.
- Describe and understand the main steps in outbreak management and prevention.
- Demonstrate skills in effective outbreak management including infection control when the outbreak is due to an infectious agent.
- Describe the different types of infection control practices and justify which type is most appropriately implemented for different outbreak conditions.
- Demonstrate effective communication skills with patients and the community as a whole.
- Describe appropriate approaches to prevent or reduce the risk of the outbreak recurring.

78-6
December 2012

Environment
Population Health

Rationale

Environmental issues are important in medical practice because exposures may be causally linked to a patient's clinical presentation and the health of the exposed population. A physician is expected to work with regulatory agencies and allied health professionals (e.g., occupational hygienists), where appropriate, to help implement the necessary interventions to prevent future illness. Physician involvement is important in the promotion of global environmental health.

Key Objectives

- Recognize the implications of environmental hazards at both the individual and population level.
- Respond to the patients concerns through appropriate information gathering and treatment.
- Work collaboratively with local, provincial and national agencies/governments as appropriate to address the concerns at a population level.
- Communicate with patients, communities, and employers, where appropriate, concerning environmental risk assessment.

Enabling Objectives

- Identify common environmental hazards and be able to classify them into the appropriate category of chemical, biological, physical and radiation.
- Identify the common hazards that are found in air, water, soil and foods.
- Describe the steps in an environmental risk assessment and be able to critically review a simple risk assessment for a community.
- Conduct a focussed clinical assessment of exposed persons in order to determine the causal linkage between exposure and the clinical condition.
- Be aware of local, regional, provincial and national regulatory agencies that can assist in the investigation of environmental concerns.
- Describe simple interventions that will be effective in reducing environmental exposures and risk of disease (e.g. sunscreen for sunburns, bug spray for prevention of West Nile Virus infection).
- Communicate simple environmental risk assessment information to both patients and the community.

78-7
December 2012

Health of Special Populations
Population Health

Rationale

Health equity is defined as each person in society having an equal opportunity for health. Each community is composed of diverse groups of individuals and sub-populations. Due to variations in factors such as physical location, culture, behaviours, age and gender structure, populations have different health risks and needs that must be addressed in order to achieve health equity. Hence physicians need to be aware of the differing needs of population groups and must be able to adjust service provision to ensure culturally safe communications and care.

Key Objectives

- Understand how variation in the determinants of health in different populations promotes or harms their health status.
- Discuss how populations may have challenges with respect to access to health services, and how members of the population may rely on traditional or alternative sources of health services that are not commonly used by society as a whole.
- Discuss the implications of the different cultural perspective and how this affects the planning, delivery and evaluation of services (both preventive and curative).
- Discuss how to provide culturally safe care with different populations.
- Discuss the unique roles provided by government, social agencies, or special groups (e.g. Aboriginal health centres, Traditional healers) in providing services to the population.

Enabling Objectives

First Nations, Inuit, Métis Peoples

First Nations, Inuit and Métis peoples are the original inhabitants of Canada. Collectively, they have a special relationship with the federal government due to their treaty status, and many historical events have had a strong impact on their health expectancy.

- Describe the diversity amongst First Nations, Inuit, and/or Métis communities in your local area in terms of their various perspectives, attitudes, beliefs and behaviours. Describe at least three examples of this cultural diversity.
- Describe the connection between historical and current government practices towards First Nations, Inuit, Métis peoples (including, but not limited to colonization, residential schools, treaties and land claims), and the intergenerational health outcomes that have resulted.
- Describe how the medical, social and spiritual determinants of health and well-being for First Nations, Inuit, Métis peoples impact their health.
- Describe the various health care services that are delivered to First Nations, Inuit, Métis peoples, and the historical basis for the systems as they pertain to these communities.

Global health and immigration

Increasing transportation of people, food and consumer goods is breaking down previous geographic boundaries. Diseases such as SARS can travel quickly around the world and events in other parts of the world affect medical practice in Canada.

Canada is also dependent on new immigrants for growth with many locations having a very high proportion of new immigrants and refugees.

- Identify the travel histories and exposures in different parts of the world as risk factors for illness and disease.
- Appreciate the challenges faced by new immigrants in accessing health and social services in Canada.
- Appreciate the unique cultural perspective of immigrants with respect to health and their frequent reliance on alternative health practices.
- Discuss the impact of globalization on health and how changes in one part of the world (e.g. increased rates of drug-resistant Tuberculosis in one country) can affect the provision of health services in Canada.

Persons with disabilities

Persons with physical, mental, or sensory disabilities have unique needs and may require health and social services to be provided in alternative ways.

- Identify the challenges of persons with disabilities in accessing health and social services in Canada.
- Discuss the issues of stigma and social challenges of persons with disabilities in functioning as members of society (link to mental health).
- Discuss the unique health and social services available to some persons with disabilities (e.g. persons with Down's syndrome) and how these supports can work collaboratively with practicing physicians.

Homeless persons

Homeless persons have unique needs due to their physical lack of basic shelter and ability to bath and prepare food safely. In addition, being homeless is associated with many other conditions such as mental health and may require health and social services to be provided in alternative ways.

- Identify the challenges of providing preventive and curative services to homeless persons.
- Discuss the major health risks associated with homelessness as well as the associated conditions such as mental illness.

Challenges at the extremes of the age continuum

The elderly and very young children both share the challenges of being at high risk for certain medical conditions (e.g. Hemolytic Uremic Syndrome) as well as being very vulnerable to changes in the determinants of health. For example, children living in poverty or poor seniors living in isolation are both at high risk for adverse health outcomes.

- Identify the challenges of providing preventive and curative services to isolated seniors and children living in poverty.
- Discuss the major health risks associated with isolated seniors and children living in poverty.
- Discuss potential solutions to these concerns.

78-8
February 2014

Work-related Health Issues

Rationale

Workplace health and safety hazards can contribute to many different health problems. Physicians play an important role in the prevention and management of occupational injury, illness and disability.

Causal Conditions

1. Ergonomic hazards (e.g. awkward postures and movements, poor lighting)
2. Chemical hazards (e.g. organic solvents, metals, asbestos, toxic gases)
3. Physical hazards (e.g. noise, vibration, radiation)
4. Biological hazards (e.g. blood or other body fluids, animal and bird droppings)
5. Psychological and work organization hazards (e.g. workplace stressors, workplace bullying)

Key Objectives

Given a patient with a health problem, the candidate will evaluate the possible workplace etiological factors, to assess the contribution of occupational exposures for the most common pathologies, to assess the impact of the condition on the ability to work, and develop an appropriate management plan. Particular attention should be paid to the identification of occupational risks for the patient and his/her co-workers.

Enabling Objectives

Given a worker with a health problem, the candidate will

1. list and interpret critical clinical findings, including:
   a. perform a history and focused physical examination to identify the illness and determine the possible relationship of symptoms to work;
   b. identify hazards in the workplace that could have had an impact on the health problem (work and exposure history);
   c. identify protective equipment being used and environmental controls that are in place;
   d. identify non occupational factors that could influence the condition.
2. list and interpret critical investigations, including:
   a. appropriate laboratory or radiologic investigations depending on the presenting health problem (e.g. chest radiography, ultrasound);
   b. physiologic and/or functional assessments (e.g. PFTs , audiograms, occupational therapy assessment).
3. construct an effective initial management plan, including:
   a. initiate specific therapy as required for the health problem;
   b. determine whether the patient should be assigned to a different work, or stop work and advise the patient on this topic;
   c. determine follow up care and whether further consultation, counselling and/or a multi-disciplinary approach to care is needed;
   d. advise the patient on workers compensation;

e. advise the relevant authorities if necessary (notifiable disease, reporting a dangerous situation).

79

Potassium Concentration Abnormal, Serum

Please see Hyperkalemia 79-1
or Hypokalemia 79-2

79-1
June 2010

Hyperkalemia

Rationale

Elevated serum potassium levels may be life-threatening and may also be indicative of the presence of other serious associated medical conditions.

Causal Conditions

1. Increased intake (usually associated with low excretion)
2. Redistribution
   a. Decreased entry into cells (e.g., insulin deficiency, beta 2 blockade)
   b. Increased exit from cells (e.g., metabolic acidosis, rhabdomyolysis)
3. Reduced urinary excretion
   a. Decreased glomerular filtration rate (e.g., acute or chronic kidney injury)
   b. Decreased secretion (e.g., aldosterone deficiency, drugs)

Key Objectives

Given a patient with hyperkalemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, including indications for specialized care. In particular, the candidate will recognize the urgency of hyperkalemia associated with electrocardiogram (ECG) abnormalities.

Enabling Objectives

Given a patient with hyperkalemia, the candidate will

1. list and interpret critical clinical findings, including
   a. perform a history and physical examination to determine the underlying cause (e.g., potassium sparing medications, signs of kidney injury);
2. list and interpret critical investigations, including
   a. those that can help in distinguishing between life-threatening hyperkalemia and pseudohyperkalemia;
   b. an ECG to determine the severity of the case;
   c. tests to distinguish between causes of hyperkalemia (e.g., serum creatinine, urine electrolytes);
3. construct an effective initial management plan, including
   a. initiate emergency measures (e.g., intravenous calcium, glucose/insulin, potassium binders, dialysis) in the case of hyperkalemia with ECG changes;
   b. refer the patient for specialized care (e.g., nephrology), if necessary.

79-2
June 2010

Hypokalemia

Rationale

Reduced serum potassium, a common clinical problem, is most often discovered on routine analysis of serum electrolytes or suspected by electrocardiogram (ECG) results. Symptoms, such as muscle weakness, develop when depletion is quite severe.

Causal Conditions

1. Decreased intake (e.g., anorexia nervosa)
2. Redistribution (e.g., alkalemia, insulin, beta 2-adrenergic stimulating drugs)
3. Increased losses
   a. Renal losses
   b. Gastrointestinal (GI) losses (e.g., vomiting, diarrhea)

Key Objectives

Given a patient with hypokalemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize the urgency of hypokalemia associated with severe muscle weakness and/or ECG abnormalities.

Enabling Objectives

Given a patient with hypokalemia, the candidate will

1. list and interpret critical clinical findings, including
   a. performing a history and a physical examination to determine the cause and complications (e.g., medications, blood pressure);
2. list and interpret critical investigations, including
   a. an ECG to identify life-threatening conduction abnormalities;
   b. tests to distinguish between causes of hypokalemia (e.g., serum and urine electrolytes);
3. construct an effective initial management plan, including
   a. ensuring appropriate potassium replacement with monitoring in a severe case;
   b. reducing renal excretion of potassium and/or GI losses;
   c. referring the patient for specialized care, if necessary.

80

Pregnancy

Please see Acute Renal Failure (Anuria or Oliguria) 89-1
or Chronic Renal Failure 89-2

80-1
November 2013

Prenatal Care

Rationale

Optimal prenatal care has the potential to reduce perinatal morbidity and mortality by identifying and reducing potential risks, treating medical conditions, providing psychosocial support, and promoting healthier lifestyles.

Key Objectives

Provide prenatal care that integrates the best available evidence into a model of shared decision-making that enables women to make informed decisions based on their needs in all aspects of preconception, pregnancy and fetal health.

Enabling Objectives

Given a patient that requires antepartum care, the candidate will

1. understand and apply the principles of informed decision-making and patient-centered care, including culturally sensitive issues
2. provide care for preconception counseling (e.g., folic acid supplementation, weight management, smoking cessation)
3. establish the desirability of the pregnancy in a patient with suspected or confirmed pregnancy and construct an appropriate initial management plan
4. provide initial and subsequent prenatal visits that include an appropriate history, physical examination, counseling, and laboratory investigations
5. identify risk factors and common antenatal complications (e.g., hypertension, maternal age, intrauterine growth restriction) and construct a plan for both the screening and initial management of these conditions.

The candidate will also

1. list and interpret relevant clinical findings, including
   a. factors that contribute to the estimation of the date of confinement (e.g., last menstrual period, date of positive pregnancy test);
   b. results of a thorough maternal health and obstetrical history;
   c. results of systematic screening for tobacco, alcohol and substance use / exposure;
   d. the need for referral for therapeutic abortion as well as for counseling on the matter;
   e. the use of medications and supplements and the need for appropriate counseling;
   f. the need for timely counseling regarding prenatal genetic screening, including options, risks, benefits, and possible outcomes;
   g. risk factors and signs of antenatal and post-partum depression;
   h. signs of intimate partner violence;
   i. physiological changes characteristic of pregnancy and determination as to whether pregnancy is progressing satisfactorily (e.g,. normal pregnancy symptoms), or if complications are present (e.g., hyperemesis, pain, bleeding);
   j. in the 2nd and 3rd trimesters:
      i. fetal and maternal progress (e.g., weight gain, blood pressure, fetal heart rate and movement;
      ii. signs and symptoms of preterm labour,
   k. determination of fetal lie and presentation in the 3rd trimester;

   l. signs and symptoms consistent with the onset of labour;
2. list and interpret relevant investigations, including
   a. appropriate initial diagnostic/screening tests (e.g. complete blood count, blood type, rubella status);
   b. prenatal genetic screening options (e.g., serum integrated prenatal screen, nuchal translucency);
   c. current recommendations for ultrasound examination in a normal pregnancy;
   d. indications and options for additional antenatal fetal surveillance (e.g., fetal movement counting, non-stress test, biophysical profile);
   e. current recommendations regarding screening for prenatal complications / risk factors, including (list not exhaustive):
      i. hemolytic disease of the newborn (e.g. from rhesus isoimmunization);
      ii. gestational diabetes mellitus;
      iii. sexually transmitted infections;
      iv. group B streptococcus;
3. construct an effective initial management plan, including
   a. discussing the woman's adjustment to pregnancy (e.g., mood, work, stress, family);
   b. counseling, including referral to community resources
      i. prenatal and parenting classes;
      ii. nutrition;
      iii. substance use or abuse;
      iv. medication;
      v. lifestyle (e.g., physical and sexual activity, travel);
      vi. breastfeeding;
   c. management of common antenatal presentations and complications (e.g., nausea and vomiting, bleeding, intra-uterine growth restriction);
   d. discussing an appropriate follow-up plan for women with a positive genetic screening result (e.g., amniocentesis, specialist referral);
   e. management of post-term pregnancy;
   f. referral for additional or specialized care (e.g., pre-eclampsia, psychiatric disorders, substance abuse), if necessary.

80-2
June 2011

Intrapartum and Postpartum Care

Rationale

Intrapartum and postpartum care includes the care of the mother and fetus during labour and the six-week period following birth. The care provided during this period has the potential to impact the mother's physical and emotional health in both the short and longer term.

Key Objectives

The candidate will be able to provide intrapartum and postpartum care that integrates the best available evidence into a model of shared decision-making that enables women to make informed decisions based on their personal needs.

Enabling Objectives

Given a pregnant patient requiring intrapartum and postpartum care, the candidate will

1. list and interpret relevant clinical findings, including
   a. those derived from an appropriate history and physical examination;
   b. the ongoing emotional and physical needs of a woman in labour;
   c. pre-labour rupture of membranes;
   d. the onset, stage, and progression of labour;
   e. indications and contraindications for induction of labour;
   f. features suggestive of a complicated labour (e.g., prolonged stage of labour, fever, meconium-stained fluid);
   g. possible causes of a complicated labour (e.g., insufficient contractions, cephalopelvic disproportion, infection);
   h. risk factors for and features of postpartum fever, hemorrhage, and pain;
2. list and interpret relevant investigations, including
   a. appropriate initial investigations for a woman presenting in labour;
   b. indications and options for fetal and maternal monitoring in labour (e.g., electronic fetal monitoring, fetal blood sampling);
   c. appropriate maternal and fetal investigations to determine the need for Rh immunoglobulin;
3. construct an effective initial management plan, including
   a. review maternal birth plans within a model of shared decision-making, including culturally sensitive care;
   b. encourage the involvement of birth partner(s), where appropriate;
   c. inform the patient about the need for maternal examination and fetal health surveillance, ensuring consent, privacy, dignity, and comfort;
   d. assess maternal knowledge of strategies for coping with pain and discuss options for pain management;
   e. ensure appropriate management of each stage of labour, including (list not exhaustive)
      i. identify when clinical intervention should not be offered or advised (e.g., normal labour);
      ii. indications and options for augmentation and active management of labour;
      iii. use of prophylactic antibiotics to reduce the risk of Group B Streptococcal disease in the neonate;
      iv. appropriate counseling and support when complications are anticipated or encountered (e.g., prolonged stage of labour, non-reassuring fetal status);
      v. initial immediate management if there are signs of fetal distress;
      vi. identify when surgical intervention (e.g., cesarean section, episiotomy) or instrumental birth (e.g., forceps) is

indicated;

vii. initial management of postpartum complications (e.g., hemorrhage, fever, depression);

f. ensure management of preterm labour and pre-labour rupture of membranes;

g. determine whether the patient requires specialized care.

80-3
November 2004

Obstetrical Complications

This Objective is no longer applicable. Please use 80-1 Prenatal Care or 80-2 Intrapartum and Postpartum Care

81
June 2011

Early Pregnancy Loss / Spontaneous Abortion

Rationale

Spontaneous abortion (miscarriage) is a loss of an early pregnancy and is very common. Spontaneous abortion occurs most frequently in the first trimester. A threatened abortion is the more common presentation. When recurrent, spontaneous abortion can be associated with infertility. Spontaneous abortion can result in grief reactions. Thus effective primary care management of this common problem is important.

Causal Conditions

The cause is usually not determined but may include:

1. Genetic factors (e.g., chromosomal abnormalities)
2. Reproductive tract abnormalities (e.g., uterine anomalies)
3. Prothrombotic factors (e.g., thrombophilia)
4. Endocrinologic factors (e.g., polycystic ovary syndrome)
5. Immunologic factors (e.g., antiphospholipid syndrome)

Key Objectives

Given a patient with a threatened abortion, the candidate will clarify the status of the pregnancy, will identify any complications, and will initiate an appropriate management plan. Particular attention should be paid to supportive counseling of parents, and to appropriate investigation in cases of recurrent abortion.

Enabling Objectives

Given a patient with threatened abortion, the candidate will

1. list and interpret critical clinical findings, including
   a. the results of a thorough obstetrical history;
   b. the results of a physical examination, with an emphasis on the status of the pregnancy (e.g., speculum examination, evidence of an ectopic pregnancy);
   c. identification of urgent complications (e.g., assessment of hemodynamic stability);
2. list and interpret critical investigations, including
   a. transvaginal ultrasound;
   b. laboratory investigations when appropriate (e.g., maternal antibody screen, complete blood count, beta-hCG);
   c. proper investigation regarding recurrent abortion (e.g., anti-phospholipid antibody screen, karyotype, hystero-salpingogram);
3. construct an effective initial management plan, including
   a. emergent management in case of hemodynamic instability (e.g., ruptured ectopic pregnancy);
   b. referral for surgical evacuation or medical management (e.g., incomplete or missed abortion), if necessary;
   c. counseling (e.g., grief, fertility implications, contraception);
   d. referral for specialized care, if indicated (e.g., serious hemorrhage, recurrent abortion).

Preterm Labour

Rationale

Preterm birth (prior to 37 weeks gestation) is the leading cause of perinatal morbidity and mortality in developed countries. Rates of preterm birth are rising with increasing maternal age and growing use of assisted reproductive technologies. Medical management of preterm labour can significantly impact maternal and neonatal outcomes.

Causal Conditions

1. Fetal (e.g., multiple gestation, congenital anomalies)
2. Placental (e.g., abruption, placental insufficiency)
3. Uterine (e.g., cervical anomalies)
4. Maternal (e.g., substance abuse, chronic illness, infection)
5. Iatrogenic (indicated induction of labour e.g., eclampsia, intrauterine growth restriction, premature rupture of membranes)

Key Objectives

Given a patient with preterm labour, the candidate will investigate the cause, will determine the level of maternal and fetal risk, and will initiate an appropriate initial management plan. Particular attention should be paid to the identification of patients requiring immediate transfer to a centre with appropriate neonatal intensive care facilities.

Enabling Objectives

Given a patient with preterm labour, the candidate will

1. list and interpret critical clinical findings, including
   a. identification of risk factors (e.g., maternal age, smoking, prior preterm deliveries);
   b. determination of status of current pregnancy (e.g., gestational age, contractions, spontaneous rupture of membranes);
   c. results of an appropriate physical examination (e.g., maternal blood pressure, speculum examination with swabs for culture and sensitivity (C and S) and fetal fibronectin);
2. list and interpret critical investigations, including
   a. assessment of fetal well-being (e.g., ultrasound, fetal monitoring);
   b. identification of contributing factors requiring treatment (e.g., urine C and S, Group B Streptococcus status);
3. construct an effective initial management plan, including
   a. initiation of appropriate medical therapy (e.g., antenatal steroids, group B streptococcal prophylaxis, tocolysis);
   b. referral for specialized care and/or transfer to an appropriate facility, if necessary;
   c. counseling of parents about relevant immediate and long-term health problems encountered by premature infants.

83
June 2011

Uterine Prolapse, Pelvic Relaxation

Rationale

Pelvic relaxation is a common disorder which may impact physical well-being and social functioning. The symptoms associated with pelvic relaxation may be embarrassing, and may not be raised spontaneously. The physician should be familiar with, and screen for, the manifestations of pelvic relaxation.

Causal Conditions

This condition is usually multifactorial. Potential causal conditions include:

1. Damage to vagina and pelvic support system
   a. Vaginal birth
   b. Prior pelvic surgery
   c. Chronic increase in intra-abdominal pressure (e.g., chronic cough)
2. Neurogenic dysfunction of pelvic floor
3. Connective tissue disease
4. Genetic predisposition

Key Objectives

Given a patient with prolapse/pelvic floor relaxation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with prolapse/pelvic floor relaxation, the candidate will

1. list and interpret critical findings, including
   a. the severity of symptoms, effect on activity, predisposing factors;
   b. the results of a physical examination aimed at determining the anatomical abnormality;
2. list and interpret critical investigations, including
   a. investigation for urinary tract infection;
3. conduct an effective initial management plan, including
   a. discussing benefits and limitations of treatment options (e.g., pelvic floor exercises, pessary, surgery) and strategies to slow progression;
   b. determining whether the patient needs to be referred for specialized care.

84
June 2010

Proteinuria

Rationale

Proteinuria is often the first indicator of potentially serious underlying renal disease.

Causal Conditions

1. Orthostatic proteinuria
2. Tubulointerstitial (interstitial nephritis)
3. Glomerular
   a. Active urine sediment
      i. Primary (e.g., IgA nephropathy, membranoproliferative glomerulonephritis)
      ii. Secondary (e.g., systemic lupus erythematosus (SLE), post-infectious)
   b. Non-active urine sediment
      i. Primary (e.g. minimal change, focal segmental glomerulosclerosis)
      ii. Secondary (e.g., diabetes, amyloid)

Key Objectives

Given a patient with proteinuria, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should recognize the importance of proteinuria as a predictor of chronic kidney disease.

Enabling Objectives

Given a patient with proteinuria, the candidate will

1. list and interpret critical clinical findings, including
   a. perform a history and physical exam to elicit symptoms and signs of underlying diseases associated with kidney disease (e.g., diabetes mellitus, connective tissue diseases);
2. list and interpret critical investigations, including
   a. quantitative measures of proteinuria (e.g., albumin/creatinine ratio, 24 hour protein collection) to guide further diagnostic work-up;
   b. tests to determine the underlying cause of the proteinuria (e.g., blood glucose, serum protein electrophoresis);
3. constuct an effective initial management plan, including
   a. outline an initial management plan to delay progression of chronic kidney disease associated with proteinuria (e.g., angiotensin-converting enzyme inhibition, treatment of hypertension and diabetes);
   b. refer the patient for specialized diagnostic tests and care (e.g., renal biopsy), if necessary.

85
November 2013

Pruritus

Rationale

Itching is common symptom. In the absence of primary skin lesions, generalised pruritus can be indicative of an underlying systemic disease, but in most cases itching is due to a cutaneous disorder.

Causal Conditions

1. Skin lesions
   a. Primary skin disease
      i. Blisters (e.g., dermatitis herpetiformis)
      ii. Rash (e.g., psoriasis, lichen planus)
   b. Parasitosis (e.g., scabies, pediculosis)
   c. Allergy (e.g., eczema, allergic dermatitis, urticaria)
   d. Arthropod bites
   e. Factitious dermatitis
2. No skin lesions
   a. Dry skin
   b. Drugs/Foods
   c. Obstructive biliary disease
   d. Uremia/kidney injury
   e. Haematological
      i. Polycythemia vera/Microcytic anemia
      ii. Leukemia
      iii. Lymphoma
   f. Carcinoma/Carcinoid syndrome
   g. Endocrine (diabetes, thyroid disease)
3. Psychiatric/Emotional disorders

Key Objectives

Given a patient with pruritis, the candidate will differentiate excoriations due to scratching from primary skin lesions. The candidate will identify skin lesions if present. In their absence, the candidate will identify the underlying cause of pruritus.

Enabling Objectives

Given a patient with pruritism, the candidate will

1. list and interpret critical clinical findings, including
   a. results of an appropriate history, including an occupational history, and of a physical examination aimed at determining the cause of pruritus;
   b. differentiation of pruritus associated with skin lesions from that without primary skin disease;
   c. any primary skin lesions associated with the pruritus;

2. list and interpret critical investigations, including
   a. in the absence of skin lesions, investigations to diagnose systemic disorders;
3. construct an effective plan of management, including
   a. local and other therapy for pruritus due to skin disease;
   b. treatment of pruritis due to underlying systemic disease;
   c. referral for specialized care, if necessary.

86
November 2010

Psychosis

Rationale

Psychosis is a severe and disabling psychiatric symptom present in several disorders, the most common of which is schizophrenia. It can be associated with severe psychosocial dysfunction and can be life threatening.

Causal Conditions

1. Psychotic disorders (e.g., schizophrenia , schizoaffective disorder)
2. Psychotic disorder due to a medical condition (e.g., seizure disorder, central nervous system tumors)
3. Substance induced psychotic disorder (e.g., corticosteroids, cocaine)

Key Objectives

Given a patient with psychosis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In acute psychosis, particular attention should be paid to differentiating a primary psychotic disorder from delirium and from psychosis secondary to a medical condition or substance induced psychosis.

Enabling Objectives

Given a patient with psychosis, the candidate will

1. list and interpret critical clinical findings, including
   a. mental status examination, with attention to risk factors for harm to self or others and assessment of capacity;
   b. collateral history (if available);
   c. physical examination (when safe to do so), with particular attention to findings suggesting an underlying or coexisting medical condition or substance use;
2. list and interpret critical investigations, including
   a. appropriate laboratory investigations and other tests (e.g., neuroimaging);
3. construct an effective management plan, including
   a. ensuring safety of patient and others (e.g., certification);
   b. ensuring ongoing assessment of capacity and the need for a substitute decision-maker;
   c. attending to the patient's psychosocial needs;
   d. pharmacotherapy (both acute and maintenance);
   e. psychosocial (e.g., community and family resources, housing);
   f. treating any underlying disorders or comorbidities;
   g. counseling and supporting patient/caregiver/family about psychosis;
   h. referring the patient for specialized care, if necessary.

87
November 2004

Pulse Abnormalities/Diminished/Absent/Bruits

This Objective is no longer applicable.

88
November 2004

Pupil Abnormalities

This Objective is no longer applicable.

89

Renal Failure

Please see Acute Renal Failure (Anuria or Oliguria) 89-1
or Chronic Renal Failure 89-2

89-1
June 2010

Acute Kidney Injury (Anuria or Oliguria)

Rationale

Acute kidney injury is defined as a rising serum creatinine over a short period of time and is associated with morbidity and mortality.

Causal Conditions

1. Pre-renal causes
   a. Renal hypo-perfusion (e.g., hepato-renal syndrome, angiotensin-converting enzyme inhibitor with bilateral renal artery stenosis)
   b. Systemic hypo-perfusion (e.g., shock, hypovelemia)
2. Renal causes
   a. Tubulointerstitial (e.g., acute tubular necrosis, interstitial nephritis)
   b. Glomerular (e.g., glomerulonephritis, thrombotic thrombocytopenic purpura/hemolytic uremic syndrome)
   c. Vascular (e.g., cholesterol emboli)
3. Post-renal/Obstruction (e.g., prostatic hypertrophy, cervical cancer, calculi)

Key Objectives

Given a patient with acute kidney injury, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate must recognize situations in which urgent intervention is required.

Enabling Objectives

Given a patient with acute kidney injury, the candidate will

1. list and interpret critical clinical findings, including
   a. results of history and physical examination aimed at determining the most likely cause of the acute kidney injury (e.g., medications, volume status);
2. list and interpret critical investigations, including
   a. laboratory tests to determine the underlying cause and severity (e.g., urinalysis, serum/urine electrolytes, serum creatinine and potassium);
   b. renal ultrasonography, if indicated;
3. construct an effective initial management plan, including
   a. assessing the need for urgent intervention (e.g., dialysis, fluid resuscitation, or urinary catheterization);
   b. managing the patient's fluid and dietary intake;
   c. determining whether the patient requires specialized care (indications for dialysis).

89-2
June 2011

Chronic kidney injury

Rationale

Chronic kidney injury is defined as persistently elevated serum creatinine. It is associated with increased morbidity, mortality, and health care costs.

Causal Conditions

1. Pre-renal causes (e.g., blood pressure)
2. Renal causes
   a. Glomerular (e.g., IgA nephropathy, diabetic nephropathy)
   b. Tubulo-interstitial (e.g., drug toxicity)
   c. Ischemic
   d. Congenital (e.g., dysplasia, polycystic kidney disease)
3. Post-renal (e.g., obstructive uropathy)

Key Objectives

Given a patient with chronic kidney injury, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with chronic kidney injury, the candidate will

1. list and interpret critical clinical findings, including
   a. those derived from an appropriate history and physical examination aimed at determining causal conditions and manifestations of chronic kidney injury;
2. list and interpret the appropriate laboratory, including
   a. diagnostic imaging investigations needed to make the diagnosis and potential complications;
3. construct an effective initial management plan, including
   a. institute immediate measures to correct metabolic abnormalities (e.g., fluids, electrolytes, acidosis);
   b. institute immediate measures to prevent further loss of renal function (e.g., blood pressure, steroids for autoimmune disorders);
   c. determine whether the patient requires urgent or specialized care (e.g., dialysis);
   d. determine whether the patient requires more specialized management (e.g., intensive long-term integrated care, dialysis and/or transplantation).

90
June 2010

Scrotal Mass

Rationale

In children and adolescents, scrotal masses do not always require treatment; other times, urgent treatment is required. Although a scrotal mass in adults is likely to be benign, it is important to recognize when it is a malignant tumor.

Causal Conditions

1. Cystic (e.g., hydrocele)
2. Solid
   a. Benign (e.g., hematoma)
   b. Malignant (e.g., seminoma)
   c. Inflammatory or infectious (e.g., orchitis, scrotal abscess)

Key Objectives

Given a patient with a scrotal mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management, in particular, differentiate malignant testicular tumors from other types of scrotal masses.

Enabling Objectives

Given a patient with a scrotal mass, the candidate will

1. list and interpret critical clinical findings, including
   a. history and physical examination results, in particular to diagnose an urgent case (i.e., right-sided varicocele, malignant testicular tumor, and torsion);
2. list and interpret critical investigations, including
   a. laboratory and radiological studies, in particular, tumor markers, Doppler ultrasound, or computed tomography (CT) scan, as appropriate;
3. construct an effective initial management plan, including
   a. in the case of a young patient, counsel and educate him about regular testicular self-examination;
   b. determine whether the patient requires an urgent or a non-urgent referral;
   c. counsel, educate, and reassure the patient with a benign scrotal mass.

91
November 2010

Scrotal Pain

Rationale

Scrotal pain is a common presentation to both primary care and Emergency Department settings. Of the potential underlying causes, certain conditions require urgent diagnosis and management to avoid serious and long-standing complications. Pain may also precede the development of an obvious mass in the scrotum.

Causal Conditions

1. Testicular torsion
2. Inflammation (e.g., acute epididymitis, orchitis, trauma)
3. Incarcerated/Strangulated hernia
4. Hemorrhage into testicular tumor

Key Objectives

Given a patient with scrotal pain, the candidate will diagnosis the cause, severity and complications, and will initiate an appropriate management plan. Particular attention should be paid to the sudden onset of pain, which requires emergent investigation for testicular torsion.

Enabling Objectives

Given a patient with scrotal pain, the candidate will

1. list and interpret critical clinical findings, including
   a. a thorough history of the presentation, including a sexual history;
   b. an appropriate abdominal and genital examination;
   c. identifying the urgency of the presentation;
2. list and interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis (e.g., ultrasound, screening for sexually transmitted infections, complete blood count)
3. construct an effective initial plan of management, including
   a. referral for specialized care (e.g., operative intervention), if necessary;
   b. appropriate pharmacologic management (e.g., antibiotics, analgesics);
   c. counseling regarding safe sexual practices when appropriate.

Seizures / Epilepsy

Rationale

Seizures are common, have many underlying causes, and present in a variety of settings. They can be both disabling and life threatening.

Causal Conditions

1. Primary neurological disorders (e.g., idiopathic epilepsy, head trauma, encephalitis)
2. Systemic disorders (e.g., hypoglycemia, electrolyte disorders)
3. Other (e.g., febrile seizures, withdrawal)

Key Objectives

Given a patient presenting with seizure(s), the candidate will diagnose the cause, severity, and complications, and will initiate appropriate management. The candidate will differentiate a seizure from other transient but non-seizure conditions (e.g., syncope, pseudoseizure). As well, the candidate will consider the presence of seizures in patients presenting with episodic neurological symptoms (e.g., inattention, psychosis). The candidate will outline a plan for the emergent treatment of a patient presenting with a seizure.

Enabling Objectives

Given a patient presenting with seizure(s), the candidate will

1. list and interpret critical clinical symptoms and findings, including an appropriate history and physical examination to
   a. differentiate between a true seizure and non-seizure conditions;
   b. categorize the type(s) of seizure(s);
   c. determine if seizures are secondary to co-existing medical conditions;
   d. identify pre-morbid conditions, triggers, and circumstances leading to the seizure (e.g., medication non-adherence);
   e. monitor for complications resulting from seizure prophylaxis medications (e.g., weight gain);
2. list and interpret critical investigations, including those conducted in order to
   a. exclude underlying medical conditions (e.g., serum glucose);
   b. investigate for possible intracranial pathology (e.g., computerized tomography scan, magnetic resonance imaging);
   c. investigate seizure type (e.g., electroencephalograph);
   d. monitor for complications related to seizure prophylaxis medications (e.g., lipid profile);
3. construct an effective initial management plan, including
   a. emergent management of an ongoing seizure;
   b. appropriate management of a patient presenting with a history of seizure(s), including counseling (e.g., personal safety, psychosocial impact), pharmacotherapy and appropriate follow-up;
   c. refer the patient for specialized care, if necessary.

93

Sexual Maturation

Please see Abnormal Pubertal Development 93-1

93-1
June 2011

Abnormal Pubertal Development

Rationale

Puberty is the transition from childhood to adolescence, physiologically and psychosocially. Questions about typical and atypical pubertal development are a common reason for presentation to primary care clinics. Abnormalities in pubertal development can be indicators of severe underlying disorders, and can be a cause of significant anxiety for patients and families. They require careful investigation and follow-up.

Causal Conditions

1. Delayed puberty
   a. Variant of normal constitutional delay of puberty
   b. Primary gonadal disorders
      i. Congenital
         A. Chromosomal (e.g., Turner and Kleinfelter Syndromes)
         B. Congenital malformations
      ii. Acquired gonadal disorders (e.g., gonadal infection, trauma, neoplasm)
   c. Secondary gonadal disorders
      i. Functional (e.g., chronic illness, malnutrition)
      ii. Hypothalamic dysfunction (e.g., hyperprolactinemia, exogenous steroids)
      iii. Pituitary dysfunction (e.g., central nervous system [CNS] tumor)
2. Precocious puberty
   a. Central precocious puberty (gonadotropin-dependent)
      i. Idiopathic
      ii. Central nervous system (e.g., neoplasms, hydrocephalus)
   b. Peripheral precocious puberty (gonadotropin-independent)
      i. Autonomous gonadal function (e.g., ovarian cysts, Leydig cell tumors of ovaries or testes)
      ii. Adrenal pathology (e.g., tumors, congenital adrenal hyperplasia)
      iii. Exogenous sex hormone exposure
3. Incomplete precocious puberty (e.g., premature thelarche, premature adrenarche)

Key Objectives

Given a patient with concerns about pubertal development, the candidate will identify the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to distinguishing normal variants of pubertal development from symptoms of serious underlying disorders, and to supportive counseling regarding the psychosocial aspects of puberty.

Enabling Objectives

Given a patient with concerns about pubertal development, the candidate will

1. list and interpret relevant clinical findings, including

   a. obtaining an appropriate history with particular attention to growth and development, nutrition, and symptoms of underlying systemic disease;.
   b. performing an appropriate physical examination with particular attention to Tanner staging of pubertal development, and to signs of underlying disorders (e.g. CNS tumors, eating disorders);
2. list and interpret relevant investigations, including
   a. differentiation of normal variants from serious or urgent underlying conditions (e.g., central nervous system or pelvic imaging if neoplasm is suspected);
3. conduct an effective initial management plan, including
   a. reassurance in case of normal variants of pubertal development;
   b. referral for appropriate specialized care (e.g., pediatrics, endocrinology, genetics, neurology), in case of abnormal pubertal development;
   c. supportive counseling to the patient and his family regarding the psychosocial implications of abnormal pubertal development.

94
November 2013

Sexually Concerned Patient

Rationale

Both male and female patients commonly express concern about sexual issues. Patients must be set at ease in order to facilitate discussion of these issues.

Causal Conditions

1. Sexual dysfunction
   a. Psychological or emotional (e.g., depression, abuse)
   b. Hormonal (e.g., menopause)
   c. Neurologic dysfunction (e.g., spinal cord injury)
   d. Vascular insufficiency (e.g., diabetes mellitus)
   e. Drug side effects (e.g., beta blockers)
   f. Trauma (e.g., episiotomy)
2. Paraphilias (e.g., pedophilia)
3. Gender identity disorders
4. Special populations
   a. People with disabilities
   b. Lesbian, gay, bi-sexual, transgendered
   c. Children and adolescents
   d. The elderly
5. Sexual addiction

Key Objectives

Given a patient with sexual concerns, the candidate will diagnose the cause and will initiate appropriate management.

Enabling Objectives

Given a patient with sexual concerns, the candidate will

1. list and interpret critical clinical findings, including those derived from
   a. an appropriate history, including psychosocial stressors, and a physical examination in order to
      i. identify treatable causes;
      ii. counsel and educate the patient;
      iii. differentiate between mutual or normal sexuality from dysfunctional sexuality, sexual abuse or assault, and incest;
      iv. where appropriate, determine the patient's social and physical sexual development and behavior as well as the patient's sexual orientation and comfort with it, where appropriate;
2. list and interpret critical investigations, as required to identify underlying causes;
3. construct an effective initial management plan based on underlying cause (e.g., sildenafil);
4. determine whether the patient requires specialized care;

5. engage community and family support, if appropriate.

95
June 2010

Skin Tumors and Ulcers

Rationale

Skin tumors and ulcers are a common presentation that require differentiation between benign and malignant conditions. They can be the presenting sign of serious underlying disease.

Causal Conditions

1. Tumors
   a. Benign (e.g., epidermal inclusion cyst)
   b. Premalignant (e.g., actinic keratosis)
   c. Malignant (e.g., melanoma)
2. Ulcers
   a. Vascular (e.g., arterial insufficiency)
   b. Infectious (e.g., bacterial)
   c. Autoimmune (e.g., vasculitis)
   d. Pressure ulceration
   e. Tumors (e.g., Marjolin's ulcer)
   f. Toxic (e.g., spider bite)

Key Objectives

Given a patient with a skin ulcer or tumor, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to determine whether the skin lesion is likely benign or malignant.

Enabling Objectives

Given a patient with a skin ulcer or tumor, the candidate will

1. list and interpret critical clinical findings, including
   a. an appropriate history and physical examination, paying particular attention to risk factors and characteristics of melanoma;
2. list and interpret appropriate investigations, including
   a. radiological and laboratory studies as well as biopsy as indicated, in particular recognizing the biopsy results requiring further action;
3. construct an effective initial management plan, including
   a. determine if the patient needs a referral;
   b. counsel and educate the patient regarding the risks of ultraviolet (UV) exposure.

96
September 2009

Skin Rash (Macules)

This Objective is no longer applicable. Please use 97 Skin Rash

97
November 2010

Skin Rash / Papules

Rationale

Skin rash and papules are among the most common reasons why patients seek medical attention, both from primary care physicians and dermatologists. Skin papules can cause local problems or can be signs of systemic disease.

Causal conditions

1. Macules
   a. Exanthems (e.g., infectious, drugs)
   b. Photo-distributed macules (e.g., drugs, photoallergy)
   c. Hypopigmented macules (e.g., tinea versicolor, vitiligo)
   d. Hyperpigmented macules (e.g., purpura, melanoma)
2. Papules
   a. Isolated
      i. Tumors (e.g., dermatofibroma, basal cell carcinoma)
      ii. Infections (e.g., fungal, pyogenic granuloma)
      iii. Keratoses (e.g., actinic, keratoacanthoma)
   b. Eruptions
      i. Acne (e.g., rosacea,vulgaris)
      ii. Dermatitis (e.g., seborrheic, contact, atopic)
      iii. Infections (e.g., molluscum contagiosum, folliculitis)
      iv. Systemic conditions (e.g., urticaria, vasculitis)
      v. Arthropod bites (e.g., scabies, pediculosis)
      vi. Drug eruptions
   c. Plaques
   a. Infections (e.g., fungal, lyme disease)
   b. Systemic conditions (e.g., acanthosis nigricans)
   c. Other dermatologic (e.g., eczema, psoriasis)
   d. Blisters
   a. Vesicles, bullae, and pustules
      i. Infections (e.g., herpes simplex virus, impetigo, varicella virus)
      ii. Other (e.g., contact dermatitis, Stevens-Johnson)

Key objectives

Given a patient with a rash or papules, the candidate will diagnose the cause, severity, and will initiate an appropriate management plan. In particular, the candidate will accurately describe the configuration and distribution of the lesions.

Enabling Objectives

Given a patient with a rash, the candidate will

1. list and interpret critical clinical findings, including
   a. the shape, arrangement, distribution, color and feel of lesions;
   b. associated symptoms, and relevant non-dermatologic findings;
   c. occupational and environmental exposures;
2. list and interpret critical investigations, including
   a. appropriate bacterial, fungal and viral cultures;
   b. skin biopsies when appropriate;
   c. relevant investigations for underlying disease;
3. construct an effective initial management plan, including
   a. appropriate topical and/or systemic therapy;
   b. patient education;
   c. determination as to whether the patient requires specialized care;
   d. recommend changes to the workplace environment, if indicated.

97-1
November 2004

Childhood Communicable Diseases

This Objective is no longer applicable.

97-2
June 2011

Urticaria, Angioedema

Rationale

Urticaria is a common disorder, and if chronic, may result in significant disability. Angioedema, which may coexist with urticaria, may be life threatening if airway obstruction occurs from laryngeal edema or tongue swelling. Both may occur with anaphylaxis.

Causal Conditions

1. Idiopathic
2. Associated with identifiable causes
   a. Allergic (e.g., drugs, insects, food)
   b. Direct mast cell release (e.g., opiates, radio-contrast agents)
   c. Complement-mediated (e.g., serum sickness, infections)
   d. Physical (e.g., dermatographism, cold)
   e. Other (e.g., mastocytosis, hereditary angioedema)

Key Objectives

Given a patient with urticaria/angioedema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine whether the condition is acute and/or life threatening and requires immediate treatment.

Objectives

Given a patient with urticaria/angioedema, the candidate will

1. list and interpret critical clinical findings, including
   a. elicit a history and physical examination including timing of symptom onset, duration of lesions, and identification of precipitants;
   b. detect the presence of or the risk for serious cardio-respiratory distress or anaphylaxis;
   c. determine chronicity, and possible association with systemic disease;
2. list and interpret critical investigations, including
   a. recognizing that laboratory investigation in both acute and chronic disease is often normal and therefore unnecessary;
3. construct an effective initial management plan, including
   a. determination of the need for emergent/urgent intervention;
   b. identification and discontinuation of offending trigger or pharmacologic agents;
   c. initiation of appropriate medication (e.g., antihistamine, steroids);
   d. prescription of and counseling in use of injectable epinephrine.

98
January 2014

Sleep-Wake Disorders

Rationale

Sleep-Wake Disorders are commonly encountered in medical practice and various medical specialties. They may be episodic or persistent but the result is inadequate quantity or quality of sleep and impaired daytime functioning.

Causal Conditions

1. External Factors contributing to sleep disruption (e.g. Poor sleep environment)
2. Intrinsic sleep disorders (e.g. Circadian rhythm disorders, insomnia, sleep-disordered breathing)
3. Co-morbid conditions (e.g. Psychiatric disorders, neurologic disorders, substance abuse, dyspnea)

Key Objectives

Given a patient with a sleep disorder, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate plan for management.

Enabling Objectives

Given a patient with a sleep disorder, the candidate will

1. conduct a thorough sleep history, including collateral history and sleep log, if necessary;
2. conduct a physical examination, if appropriate;
3. determine if a patient requires specialized investigations (e.g. polysomnography);
4. counsel the patient on the management of the sleep disorder, depending on the underlying cause;
5. screen for safety concerns (e.g. excessive daytime somnolence).

99

Sodium Concentration Abnormal, Serum

Please see Hypernatremia 99-1
or Hyponatremia 99-2

99-1
November 2010

Hypernatremia

Rationale

Increased serum sodium concentration is encountered more frequently in the elderly and in infants. Both hypernatremia and treatment of hypernatremia may be associated with neurological complications.

Causal Conditions

1. Water depletion (dehydration)
   a. Decreased intake of water (e.g., impaired thirst)
   b. Increased loss
      i. Renal loss (e.g., osmotic diuresis)
      ii. Gastrointestinal loss (e.g., diarrhea)
      iii. Increased insensible loss (e.g., prolonged exercise)
2. Sodium gain (e.g., hypertonic fluid replacement)

Key Objectives

Given a patient with hypernatremia, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, the candidate will recognize that most cases occur in the frail elderly population due to conditions associated with water depletion.

Enabling Objectives

Given a patient with hypernatremia, the candidate will

1. list and interpret critical clinical findings, including
   a. history aimed at identifying the common triggers and the clinical consequences of hypernatremia;
   b. physical examination with careful assessment of volume status and the neurological effects of hypernatremia;
2. list and interpret critical investigations, including
   a. estimation of water deficit;
   b. specific laboratory and other investigations for underlying medical conditions (e.g., blood glucose, brain imaging);
3. construct an effective initial management plan, including
   a. establishing a short-term and long-term plan for correcting the sodium concentration, with recognition of the neurological consequences of overly rapid correction;
   b. correcting causes of hypernatremia.

99-2
June 2010

Hyponatremia

Rationale

Decreased serum sodium concentration is common with a multitude of underlying etiologies. Both hyponatremia and treatment of hyponatremia may be associated with neurological complications.

Causal Conditions

1. Hyponatremia with normal serum osmolality (e.g., hyperlipidemia)
2. Hyponatremia with high serum osmolality (e.g., hyperglycemia)
3. Hyponatremia with low serum osmolality
   a. Total body water low, elevated antidiuretic hormone (ADH) level (e.g., gastrointestinal loss, diuretic use)
   b. Total body water volume normal (e.g., SIADH, hypothyroidism, adrenal insufficiency)
   c. Total body water high, elevated ADH level (e.g., congestive heart failure, nephrotic syndrome, cirrhosis)

Key Objectives

Given a patient with hyponatremia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, recognizing that severe hyponatremia can be life-threatening.

Enabling Objectives

Given a patient with hyponatremia, the candidate will

1. list and interpret critical clinical findings, including
   a. appropriate history and physical examination, with particular attention to assessment of volume status;
2. list and interpret key investigations directed towards establishing the underlying etiology, including plasma and urine osmolality and urine electrolytes;
3. construct an effective initial management plan, including
   a. a therapeutic approach based on the underlying etiology;
   b. understanding the risk factors for, and how to avoid central pontine myelinolysis;
   c. correcting serum sodium at an appropriate rate and understanding the risks and indications for more rapid correction of sodium concentration.

100
November 2013

Sore Throat and/or Rhinorrhea

Rationale

Sore throat and rhinorrhea are very common clinical presentations. Inappropriate use of antibiotics for viral pharyngitis is a significant contributing factor to antibiotic resistance.

Causal Conditions

1. Infections (e.g., viral, bacterial, candidial)
2. Allergic (e.g., chronic allergic rhinosinusitis)
3. Other (e.g., trauma, neoplasm, foreign body)

Key Objectives

Given a patient with a sore throat and/or rhinorrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with a sore throat and/or rhinorrhea, the candidate will

1. list and interpret critical clinical findings, including
   a. presence or absence of fever, cough, cervical lymphadenopathy, tonsillar exudates;
   b. relationship to environmental exposure;
   c. visual inspection of the nose and oropharynx;
2. list and interpret critical clinical investigations, including
   a. determining whether further testing for group A streptococci is indicated;
   b. determining if an allergy or more unusual cause for rhinorrhea is present;
   c. determining the need for blood testing (e.g., monospot);
3. construct an effective initial management plan, including
   a. appropriate use of antibiotics;
   b. recognition of the role of antibiotics (e.g., prevention of acute rheumatic fever);
   c. determination as to whether the patient requires specialized care.

100-1
November 2010

Smell / Taste Dysfunction

Rationale

Smell and taste are related senses and alterations in these senses are relatively common.

Causal Conditions

1. Conductive (e.g., inflammatory, neoplastic, congenital)
2. Sensory-neural (e.g., head trauma, viral damage to nerve)

Key Objectives

Given a patient who presents with smell or taste dysfunction, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to the history and physical examination to distinguish between conductive and sensory-neural causes.

Enabling Objectives

Given a patient with smell or taste alteration, the candidate will

1. list and interpret critical clinical findings, including
   a. confirmation that the subjective complaint of smell or taste loss truly represents a derangement of smell;
   b. determination of the presence of nasal obstruction or rhinitis, which may indicate a conductive defect;
   c. determination of onset, associated symptoms and risk factors suggesting other causes;
2. list and interpret critical clinical investigations, including
   a. selection of laboratory/imaging studies consistent with clinical findings;
3. construct an effective initial management plan, including
   a. initiation of initial management of conditions treatable in office;
   b. determination as to whether the patient requires specialized care.

101
November 2010

Stature Abnormal (Tall Stature / Short Stature)

Rationale

Normal growth is a reflection of a child's general health. Deviations may be due to illness, genetics or other environmental factors.

causal conditions

1. Tall Stature
   a. Genetic (e.g., Marfan's syndrome)
   b. Endocrine (e.g., excess growth hormone)
2. Short Stature
   a. Genetic (e.g., Down syndrome)
   b. Systemic disorders (e.g., chronic disease and treatment complications)
   c. Environmental
      i. Malnutrition
      ii. Psychosocial deprivation
      iii. Toxins/drugs
   d. Intrauterine growth restriction [See WEIGHT (LOW) AT BIRTH/INTRAUTERINE GROWTH RESTRICTION]

Key Objectives

Given a patient with abnormal stature, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine whether the growth pattern is pathological or normal and determine whether the child has dysmorphic features.

Enabling Objectives

Given a patient with abnormal stature, the candidate will

1. list and interpret critical findings, including
   a. determine if the child is following normal growth pattern (e.g., accurate growth chart, family history);
   b. take a history to identify factors resulting in abnormal growth:
      i. maternal or intra-uterine environmental factors;
      ii. phases of growth;
      iii. underlying medical conditions or other environmental factors;
   c. identify dysmorphic features on physical examination;
2. list and interpert critical investigations, if needed (e.g., X-ray of wrist for bone age);
3. construct an effective initial management plan, including
   a. counsel the family and the child with questions about stature;
   b. refer the patient for specialized care, if necessary.

102
June 2010

Strabismus and/or Amblyopia

Rationale

Screening programs for strabismus, as well as parental concern about children with a wandering eye, crossing eye, or poor vision in one eye, require physicians to be able to detect this condition and be familiar with initial management steps. Failure to identify and treat this condition in a timely manner may result in visual defects and psychosocial and vocational consequences.

Causal Conditions

1. Esotropia (convergent, internal, cross-eye) -- congenital and acquired
2. Transient (e.g., presents at less than 4 months of age)
3. Idiopathic (esotropia and exotropia)
4. Neurogenic strabismus (e.g., cranial nerve paresis)
5. Myogenic strabismus (e.g., mechanical restriction, neuromuscular junction defect, muscle disease/inflammation)
6. Sensory strabismus (loss of vision due to organic ocular anomalies causing strabismus)
7. Amblyopia without strabismus

Key Objectives

Given a patient with strabismus and/or amblyopia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriately timed management plan. In particular, he will determine the type of strabismus and the necessary urgency of intervention, in order to prevent the development of severe amblyopia.

Enabling Objectives

Given a patient with strabismus and/or amblyopia, or a history of risk factors for same, the candidate will

1. identify the risk factors for the development of strabismus or amblyopia in a child (e.g., prematurity, family history);
2. list and interpret key components of the history and physical exam with particular attention to
   a. differentiating pseudo strabismus (e.g., lid configuration) from true strabismus;
   b. conducting a thorough ocular exam including visual acuity if appropriate;
3. construct an effective initial management plan, including
   a. determine if the patient requires further investigation or a referral based on the risk factors or the clinical findings;
   b. counsel parents about the need for timely referral to manage strabismus in order to prevent the development of amblyopia.

103
November 2013

Substance-Related or Addictive

Rationale

Addiction may be to substances or may be a process (behavioral) addiction. Alcohol and nicotine abuse are such common conditions that virtually every clinician is confronted with their complications. Addiction to prescription drugs and to other substances is prevalent in all communities and is a common cause of medical morbidity and mortality.

Causal conditions

1. Substance use
   a. Stimulants
   b. Depressants
   c. Other substance
2. Process (behavioral) addictions (e.g., gambling)
3. Adverse childhood or traumatic experiences
4. Epigenetic changes
5. Co-morbid illness (e.g., mental illness, chronic disease states, trauma)
6. Psycho social stressors (e.g., unemployment, social isolation)

Key Objectives

Given a patient with a substance-related or addictive disorder, the candidate will be able to identify the issue, potential consequences and the need to provide immediate and continuing support and intervention.

Enabling Objectives

Given a patient with a substance-related or addictive disorder, the candidate will

1. list and interpret critical clinical findings, including those derived from:
   a. a history and/or a collateral history relevant to the presenting problem and pertinent to previous, possible addictive behavior (including relevant screening tools);
   b. a physical examination aimed at determining the duration and severity of any problems with substance abuse or addiction and potential withdrawal and co-morbidities, if necessary;
2. list and interpret critical investigations, including
   a. laboratory or diagnostic imaging (e.g., drug screening, liver function studies);
3. construct an effective initial management plan, including
   a. acting on opportunities for brief intervention with regards to behavioral modification and appropriate pharmacological intervention (e.g., nicotine replacement therapy);
   b. determining whether the patient or family members require specialized services such as addiction treatment. The patient may also require individual, family, community, psychological or other medical services.

103-1
November 2013

Substance Withdrawal

Rationale

Substance withdrawal has been shown to cause significant morbidity and mortality worldwide and enormous impacts on public health. Depending on the type of substance, there are withdrawal syndromes, which are important to identify and treat.

Causal conditions

1. Chemical dependency (e.g., alcohol, illicit drugs, tobacco, prescription drugs)

Key Objectives

Given a patient with suspected substance withdrawal, the candidate will be able to identify the issue, potential consequences and the need to provide immediate and continuing support and intervention.

Enabling Objectives

Given a patient with suspected substance withdrawal, the candidate will

1. list and interpret critical clinical findings, including those derived from:
   a. a thorough medical, family and social history (see also Substance-Related and Addictive Disorders) ;
   b. collateral history, if indicated;
   c. a physical examination with particular attention to mental status examination and autonomic instability;
2. list and interpret critical investigations, including
   a. drug screening;
   b. use of appropriate screening tools (e.g., MMSE, CAGE, withdrawal assessment tools);
   c. laboratory or other investigative tests to screen for organ damage and other complications as appropriate (e.g., liver function tests, chest radiography);
3. construct an effective management plan, including
   a. supportive measures if required acutely (e.g., airway, fluid resuscitation, pain management);
   b. a safe environment (e.g.: hospitalization, recovery centers);
   c. appropriate pharmacological intervention (e.g., thiamine, long-acting benzodiazepines, sedation);
   d. referral for specialized care (e.g., addiction programs, family counseling, mental health services), if necessary.

104
June 2011

Sudden Infant Death Syndrome (SIDS), Apparent Life Threatening Event (ALTE)

Rationale

SIDS and ALTE are devastating events for parents, caregivers and health care workers alike. It is imperative that risk factors, possible causes and parental concerns are thoroughly evaluated.

Causal Conditions

The causes of SIDS are generally unknown, although some risk factors have been identified, including

1. Non-preventable factors (e.g., abnormal arousal/sleep pattern,)
2. Preventable factors
   a. Maternal (e.g., smoking,)
   b. Neonatal (e.g., prematurity, prone sleep position,)

Many cases of ALTE are idiopathic, but possible causes include

1. Gastrointestinal (e.g., gastroesophageal reflux disease)
2. Central nervous system (e.g., seizure)
3. Respiratory (e.g., infection, airway obstruction)
4. Cardiac (e.g., congenital heart disease)
5. Other (e.g. sepsis, poisoning)

Key Objectives

Given an infant presenting with SIDS or ALTE, the candidate will evaluate fully the possible risk factors and/or causes. In cases of ALTE, the candidate will diagnose the severity and complications, and initiate an appropriate management plan. The candidate will also counsel the infant's parents and family.

Enabling Objectives

Given a patient with SIDS or ALTE, the candidate will

1. list and interpret critical clinical findings including
   a. a detailed history of the event;
   b. risk factors or causes known to be associated with SIDS or ALTE;
2. in ALTE, list and interpret critical investigations based on the clinical features (e.g., cultures, chest X-ray)
3. in case of ALTE, construct an effective initial management plan, including
   a. admit for observation;
   b. counsel and support the parents' emotional needs, discuss the association of ALTE and SIDS, and refer as necessary;
   c. refer the parents if they need further education (e.g. for resuscitation training for recurrent events);
   d. refer for specialized care (e.g. cardiac conditions), if necessary;
   e. assess the need for child protection and refer as appropriate;

4. in case of SIDS, initiate short and long-term bereavement support.

105
November 2013

Suicidal Behavior

Rationale

Suicidal behavior is a common psychiatric emergency and a major cause of death across age groups. It causes major distress to surviving relatives and others.

Causal Conditions

1. Psychiatric disorder (e.g., depression, schizophrenia)
2. Psychosocial stressors (e.g., divorce, adverse childhood experience)
3. Substance use
4. Other (e.g., serious chronic disease)

Key Objectives

Given a patient with suicidal behavior, the candidate will determine the degree of risk and institute appropriate management.

Enabling Objectives

Given a patient with suicidal behavior, the candidate will

1. list and interpret critical clinical findings, including
   a. potential contributing conditions identified through an appropriate history and physical examination;
   b. assessed and quantified risk for suicide, including imminent risk, recent stresses and life events;
2. list and interpret critical investigations, including
   a. illicit drug and alcohol screen, where appropriate;
3. construct an effective initial management plan, including
   a. ensuring the safety of patient at imminent risk for self harm (e.g., urgent hospitalization), including continuous observation while arrangements are being made;
   b. assessing capacity to make decisions if patient demands to leave;
   c. initiating management of underlying problems if the risk for suicide is not imminent (e.g., depression, psycho-social stressor);
   d. maintaining confidentiality while recognizing the benefits of support networks;
   e. referring the patient for specialized care, if necessary.

106
June 2010

Syncope and Pre-Syncope

Rationale

Syncopal episodes, an abrupt and transient loss of consciousness followed by a rapid and usually complete recovery, are common. Pre-syncope refers to the prodromal state of syncope. Syncope can easily be confused with other symptoms (e.g. seizures) and is associated with a wide range of underlying conditions, both benign and serious. In a subset of patients, a diagnosis will not be found.

Causal Conditions

1. Cardiovascular
   a. Cardiac arrhythmia
   b. Reduced cardiac output (e.g., aortic stenosis, myocardial infarction)
   c. Reflex or underfilling (e.g., vasovagal, orthostatic)
2. Cerebrovascular causes (e.g., carotid artery disease, transient ischemic attack)
3. Other
   a. Metabolic (e.g., hypoglycemia)
   b. Drugs (e.g., anti-hypertensive medications)
   c. Psychiatric (e.g., panic disorders)

Key Objectives

Given a patient with syncope or pre-syncope, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to differentiate syncope from seizure and identify patients with syncope due to serious underlying disorders.

Enabling Objectives

Given a patient with syncope or pre-syncope, the candidate will

1. list and interpret key clinical findings, including
   a. a targeted history and physical examination directed towards establishing an underlying etiology;
2. list and interpret key investigations supported by the history and physical examination, with particular attention to diagnosing disturbances of cardiac rhythm and function (e.g., electrocardiogram, echocardiogram)
3. construct an effective initial management plan, including
   a. medication management, if indicated;
   b. evaluating the patient for fitness to drive or work;
   c. counseling the patient who has had a syncope;
   d. determining whether the patient requires specialized care and/or consultation.

107

Temperature Abnormal/Fever and/or Chills

Please see Hyperthermia 107-1
or Fever of Unknown Origin 107-2
or Fever in a Neonate, Fever in a Child 107-3
or Fever In The Immune Compromised Host / Recurrent Fever 107-4
or Hypothermia 107-5

107-1
November 2010

Hyperthermia

Rationale

Hyperthermia is an elevation in core body temperature due to failure of thermo-regulation (in contrast to fever, which is induced by cytokine activation). It is a medical emergency and may be associated with severe complications and death.

Causal Conditions

1. Increased heat load
   a. Heat stroke
      i. Exertional
      ii. Non-exertional (e.g., age extremes, exposure)
   b. Metabolic (e.g., thyroid, malignant hyperthermia)
2. Diminished heat dissipation (e.g., medications and illicit drugs)

Key Objectives

Given a patient with hyperthermia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to the need for urgent treatment.

Enabling Objectives

Given a patient with hyperthermia, the candidate will

1. list and interpret critical clinical findings, including
   a. elicit a relevant history including the setting and/or predisposing factors;
   b. perform physical examination to identify signicant hyperthermia;
2. list and interpret critical investigations, including
   a. select investigations for the common possible complications (e.g., kidney injury, arrhythmias);
3. construct an effective initial management plan, including
   a. ensure rapid, safe cooling;
   b. determine whether the patient requires specialized care.

107-2
November 2010

Fever of Unknown Origin

Rationale

Fever of unknown origin is defined as an elevated temperature lasting three weeks or more without an established diagnosis despite initial appropriate assessment. Underlying causes may include serious conditions.

Causal Conditions

1. Infections (e.g., tuberculosis)
2. Neoplasms (e.g., lymphoma)
3. Inflammatory (e.g., systemic lupus erythematosus)
4. Other (e.g., toxic, factitious)

Key Objectives

Given a patient with fever of unknown origin, the candidate will outline a plan of investigation to determine the cause, establish the severity and presence of complications, and will initiate an appropriate management plan.

Objectives

Given a patient with fever of unknown origin, the candidate will

1. list and interpret critical clinical findings, including
   a. elicit an appropriate history of fever pattern, associated symptoms (e.g., night sweats, weight loss) and relevant risk factors (e.g., travel history, medication);
   b. recognize the need for repeated clinical assessments;
2. list and interpret critical investigations, including
   a. relevant history and physical examination;
3. construct an effective initial management plan consistent with the underlying cause, including
   a. avoid empiric treatments without a firm diagnosis;
   b. determine if the patient requires specialized care.

107-3
November 2011

Fever in a Neonate, Fever in a Child

Rationale

Fever in a neonate may be life threatening and requires immediate investigation and management. Fever in an older infant or child is the most common symptom for which parents seek medical advice. While most causes are self-limited viral infections, it is important to identify serious infections or underlying systemic diseases which are amenable to treatment.

Causal Conditions

1. Febrile illness of short duration (less than 2 weeks)
   a. Viral
      i. With rash (e.g., measles, varicella)
      ii. Without rash (e.g., common cold, adenoviral)
   b. Bacterial
      i. With rash (e.g., meningitis, scarlet fever)
      ii. Without rash (e.g., septicemia, streptococcal pharyngitis)
   c. Other infectious agents (e.g., mycoplasma pneumonia)
2. Prolonged febrile illness (greater than 2 to 3 weeks) # see also see FEVER OF UNKNOWN ORIGIN
   a. Systemic Disease (e.g., juvenile rheumatoid arthritis, leukemia)
   b. Familial-hereditary diseases (e.g., nephrogenic diabetes insipidus)

Key Objectives

Given an infant or a child with fever, the candidate will diagnose the cause, severity and complications, and will initiate a management plan. Particular attention should be paid to differentiation between acute bacterial and viral infections identification of a neonate or child with sepsis and initiation of immediate therapy.

Objectives

Given an infant or a child with fever, the candidate will

1. list and interpret critical clinical findings, including
   a. identification of severe presentations including sepsis and fever in a neonate less than 2 months of age;
   b. differentiation between infectious and non-infectious causes of fever;
   c. identification of common causes and risk factors of fever in the applicable age group;
2. list and interpret critical investigations, including appropriate laboratory investigations which are key in the processes of exclusion, differentiation, and diagnosis:
   a. relevant and cost-effective measures to investigate the cause of the fever and exclude a more serious problem;
   b. awareness and application of clinical practice guidelines for investigation of fever in neonates;
   c. specific technical procedures to diagnose the cause of the fever (e.g., blood culture, lumbar puncture), if necessary;
3. construct an effective management plan, including
   a. outline the principles of managing a septic neonate or child and initiate immediate resuscitation measures, as

required;

b. outline the management of the specific febrile illness (e.g., streptococcal pharyngitis);
c. determine whether the patient needs to be referred for specialized care;
d. counsel parents, family or caregivers about the prevention of and care of a child with a febrile illness;
e. discuss appropriate use of antipyretics in case of acute febrile illness;
f. discuss the use and complications of preventative vaccinations;
g. discuss the relevant features of pandemic, epidemic, and endemic influenza, populations at highest risk of infection and/or complications of influenza, and measures taken to modify the illness and prevent the predictable excess mortality of influenza.

107-4
November 2010

Fever In The Immune Compromised Host / Recurrent Fever

Rationale

Patients with immunodeficiencies are at high risk for infections. The infective organism and site depend on the type and severity of immunosuppression. Many of these infections are life-threatening.

Causal Conditions of Impaired Immune System

1. Host defense defects
   a. Cellular (e.g., human immunodeficiency virus (HIV), steroids)
   b. Humoral (e.g., congenital)
   c. Neutropenia (e.g., medication induced)
2. Anatomic barrier defects (e.g., surgery, burns)
3. Others (e.g., splenectomy, diabetes)

Key Objectives

Given a patient with fever and immunodeficiency, the candidate will diagnose the cause, severity, and complications, and will initiate appropriate management. In particular, the candidate will determine whether the patient with fever is immunocompromised and the likely nature of the immune defect, perform appropriate investigations to diagnose the source of infection, and will initiate appropriate management based on the type and severity of the immunosuppression.

Enabling Objectives

Given a patient with immunodeficiency, the candidate will

1. list and interpret critical clinical findings, including
   a. conduct a focused history and physical examination to determine the site and type of infection;
   b. determine the chief underlying immunologic defect and class of organisms likely to be involved;
2. list and interpret critical investigations, including
   a. appropriate tests and investigations relevant to the suspected underlying immunologic defect (e.g., complete blood count, bronchoscopy);
3. construct an effective initial management plan, including
   a. outline strategies for prevention of infection (e.g., prophylactic immunization);
   b. outline the initial and urgent management for fever;
   c. determine if the patient requires specialized care.

107-5
November 2010

Hypothermia

Rationale

Hypothermia (central temperature less than 35 °C) can represent a medical emergency. Severe hypothermia is defined as a core temperature of less than 28 °C.

Causal Conditions

1. Decreased heat production (e.g., hypothyroidism)
2. Increased heat loss (e.g., exposure)
3. Impaired thermoregulation (e.g., neurologic, metabolic, alcohol)

Key Objectives

Given a patient with hypothermia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize the severity of hypothermia and provide urgent therapy.

Enabling Objectives

Given a patient with hypothermia, the candidate will

1. list and interpret critical clinical findings, including
   a. determine the severity of hypothermia by using appropriate methods;
   b. determine whether concomitant illnesses, alcohol or drugs may have precipitated the hypothermia;
2. list and interpret critical investigations, including
   a. investigations for underlying causes (e.g., thyroid-stimulating hormone);
3. construct an effective initial management plan, including
   a. initiating life-saving treatment in case of severe hypothermia;
   b. understanding the advantages and disadvantages of active/passive external re-warming and active core re-warming;
   c. conducting ongoing monitoring of patient during rewarming to identify complications (e.g., arrhythmia);
   d. determining if the patient requires further specialized care;
   e. if the hypothermic patient is arrested, recognizing the need for rewarming prior to ceasing resuscitation (particularly in the case of a child).

108
November 2010

Tinnitus

Rationale

Tinnitus is an awareness of sound without an obvious external source. Although not usually related to serious medical problems, it may interfere with daily activities, affect quality of life, and occasionally be indicative of serious organic disease.

Causal Conditions

1. Auditory
   a. External/Middle ear (e.g., otitis, wax)
   b. Cochlear-vestibular end organ (e.g., medications, otosclerosis, environmental exposure)
   c. Cochlear nerve (e.g., acoustic neuroma)
   d. Brainstem/Cortex (e.g., ischemia, infection)
2. Para-auditory (e.g., venous hum, arterial bruits)

Key Objectives

Given a patient with tinnitus, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should understand the distress that is caused by this usually benign condition.

Objectives

Given a patient with tinnitus, the candidate will

1. list and interpret critical clinical findings, including
   a. conduct an appropriate history and physical examination to classify and diagnose the cause (e.g., disease-related, noise-related);
2. list and interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis, including
   a. determination as to whether the patient requires further investigation based on clinical findings;
3. construct an effective plan of management, including
   a. refer the patient for specialized care, if necessary;
   b. counsel the patient if causes of tinnitus are deemed to be relatively benign (e.g., stop medication, remove wax or foreign body).

109
June 2011

Trauma

Rationale

Trauma is common. Physicians must be capable of assessing and treating patients with life-threatening traumatic injuries.

Causal conditions

1. Blunt trauma (e.g., blast injuries, deceleration injuries)
2. Penetrating trauma (e.g., stabbing, shooting)

Key Objectives

Given a patient who has sustained trauma, the candidate will diagnose the cause, severity, and complications of the injury, and will initiate an appropriate management plan.

Enabling Objectives

Given a patient with trauma, the candidate will

1. list and interpret critical clinical findings, including those derived from:
   a. an appropriate history taken from patient or collateral;
   b. an appropriate examination performed according to Advanced Trauma Life Support (ATLS) guidelines, completing primary and secondary surveys in order to ensure that all external evidence of injury is assessed;
2. construct an effective initial management plan:
   a. initiate resuscitation of the injured patient and assess the patient's response to resuscitation;
   b. prevent secondary injury of the injured patient (e.g., hypoxia, hypovolemia, spinal injury);
   c. determine whether the patient needs to be referred for specialized care;
3. list and interpret investigations useful in the management of the injury (e.g., imaging, electrocardiogram), keeping in mind that such tests should be deferred if the patient is unstable.

109-1
June 2011

Abdominal Injuries

Rationale

Abdominal injuries are common and may be life threatening. Assessment of a patient with an abdominal injury may be difficult as it may produce few clinical signs. Interpretation of the findings of physical examination of the abdomen may also be difficult in the multiply-injured patient who is unconscious.

Causal conditions

1. Blunt trauma (e.g., blast injuries, deceleration injuries)
2. Penetrating trauma (e.g., stabbing, shooting)

Key Objectives

Given a patient with an abdominal injury, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan

Enabling Objectives

Given a patient with trauma, the candidate will

1. list and interpret critical clinical findings, including
   a. the mechanism of injury;
   b. the signs of injury;
   c. the identification of an abdominal injury that commonly occurs in association with other serious injuries;
2. construct an effective initial management plan, including
   a. initiate resuscitation and assess the patient's response to resuscitation;
   b. determine whether the patient requires specialized care;
3. list and interpret critical investigations, including
   a. appropriate laboratory investigations (e.g., serial CBC, urinalysis);
   b. appropriate diagnostic testing (e.g., imaging, peritoneal lavage).

109-2
June 2011

Insect Stings and Bites

For animal bites, please refter to see Skin Wounds

Rationale

Insect bites in Canada most commonly cause a local inflammatory reaction that subsides within a few hours and is mostly a nuisance. Direct and serious reactions to stings and bites, although rare, need to be dealt with urgently. Mosquitoes frequently transmit infectious disease worldwide with an enormous burden to health. Tick-borne illness is also common.

Causal Conditions

1. Immediate local reaction (e.g., mosquito bite)
2. Toxic or systemic effects (e.g., anaphylaxis, neurotoxic agents)
3. Infection (e.g., malaria)

Key Objectives

Given a patient with an insect sting or bite, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize and treat patients at risk for an immediate anaphylactic reaction. The candidate will also counsel patients travelling to areas of endemic disease.

Enabling Objectives

Given a patient with an insect sting or bite, or about to travel to an area of endemic disease:

1. list and interpret critical clinical findings, including those derived from
   a. a history and a physical examination aimed at attending to serious acute allergic reaction;
   b. information gathered concerning the nature of the bite or sting (e.g., travel history);
   c. information gathered on future travel plans and patient immunization history;
2. list and interpret critical investigations, including
   a. laboratory testing according to the nature of the presumed exposure (e.g., blood film, INR);
3. construct an effective initial management plan, including
   a. treat immediate life-threatening conditions (e.g., epinephrine, antitoxin);
   b. counsel the patient and initiate protective measures if he is planning on travelling to endemic areas;
   c. treat potential ongoing infections;
   d. refer the patient for specialized care, if necessary.

109-3
June 2010

Bone or Joint Injury

see also FRACTURES AND DISLOCATIONS

Rationale

Bone and joint injuries are a frequent cause of musculoskeletal pain and/or impact on function. Major fractures and dislocations are at times associated with other injuries, and priorities must be set for each patient. Many injuries are managed in a primary care setting without the need for referral. Unexplained fractures in children should alert physicians to the possibility of abuse.

Causal Conditions

1. High energy trauma
2. Non-accidental injuries (e.g., domestic violence, child abuse)
3. Falls
4. Pathologic conditions pre-disposing to injury (e.g., osteoporosis, ligamentous laxity)

Key Objectives

Given a patient with acute onset of pain or deformity in the spine or extremities, the candidate will be able to determine if there has been a bone or joint injury, assess the severity of the injury, identify possible complications, and construct an appropriate management plan.

Enabling Objectives

Given a patient with acute onset of pain or deformity in the spine or extremities, the candidate will

1. list and interpret critical clinical findings, including
   a. determination of the mechanism of injury and, when required, performance of a targeted examination to exclude other immediately life-threatening injuries;
   b. when possible, determination of the specific site of injury;
   c. assessment of neurological and vascular status;
   d. symptoms and signs suggestive of abuse;
   e. screen for a history of recurrent falls;
2. list and interpret critical investigations, including
   a. an appropriate imaging modality;
   b. nerve conduction studies when indicated;
3. conduct an effective initial management plan, including
   a. application of an appropriate splint, sling or brace;
   b. restriction of weight bearing when indicated;
   c. prescription of analgesics and anti-inflammatory medications as required;
   d. referral of patients in need of specialized care as appropriate;
4. provide follow-up care, including in regards to
   a. duration of immobilization;

b. return to work and or normal activity;
c. appropriate use of other health care professionals (e.g., physiotherapist, occupational therapist);
d. complications requiring further treatment or referral (e.g., complex regional pain syndrome, adhesive capsulitis);
e. factors that will impact recovery from the injury (e.g., living situation, employment, nutrition, addiction, general health).

109-4
June 2011

Chest Injuries

Rationale

Chest injuries are potentially life threatening. Injury to the chest may be blunt or penetrating.

Causal Conditions

1. Blunt trauma (e.g., blast injuries, deceleration injuries)
2. Penetrating trauma (e.g., stabbing, shooting)

Key Objectives

Given a patient with a chest injury, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. Since such patients frequently present in shock and/or respiratory distress, particular attention should be paid to prompt resuscitation and stabilization of the patient.

Objectives

Given a patient with chest injury, the candidate will

1. list and interpret critical clinical findings, including
   a. the mechanism of injury;
   b. the signs of injury;
   c. the identification of signs and symptoms of common life-threatening chest injuries (e.g., aortic rupture, pericardial tamponade, tension pneumothorax, massive hemothorax);
2. construct an effective initial management plan, including
   a. initiate resuscitation of the injured patient and assess the patient's response to resuscitation;
   b. recognize the indications for urgent intervention;
3. list and interpret critical investigations (e.g., imaging, electrocardiography), while keeping in mind that such tests should be deferred until the patient is stabilized.

109-6
June 2011

Drowning (Near-drowning)

Rationale

Near-drowing is defined as survival beyond 24 hours following a submersion event. Toddlers and young children, adolescents and young adults, and the elderly are at increased risk.

Causal Conditions

1. Inability to swim (e.g., overestimation of capability)
2. Risk-taking behavior/boat accidents
3. Alcohol and substance abuse (>50% of adult drowning deaths)
4. Inadequate adult supervision
5. Concomitant clinical difficulties
   a. Trauma
   b. Seizures
   c. Cerebrovascular accident
   d. Cardiac event

Key Objectives

Given a patient with a history of a submersion event, the candidate with make the appropriate diagnosis of near-drowning, assess the patient with respect to severity and complications, and will initiate an appropriate management plan.

Objectives

Given a patient with near-drowning, the candidate will

1. recognize the need for careful rescue, paying attention to the safety and well-being of the rescuer(s)
2. initiate appropriate cardiopulmonary resuscitation if/when appropriate
3. demonstrate appropriate airway management when indicated (positive-pressure bag and mask, endotracheal intubation)
4. recognize the potential for co-existing trauma, including spinal cord injury, and implement appropriate precautions
5. initiate additional supportive therapy as indicated by the clinical situation, including oxygen administration, intravenous fluid therapy and correction of hypothermia
6. consult emergency medicine or critical care services appropriately when there is a need for intubation, mechanical ventilation or cardiovascular support
7. recognize the need to continue cardiopulmonary resuscitation until the victim's core body temperature can be restored to 32-35 degrees Celcius in the event of a cold water immersion/submersion
8. recognize the need for an interval of observation (4 to 6 hours) following rescue/resuscitation from near-drowning
9. initiate appropriate cardiopulmonary and neurologic monitoring
10. recognize potential complications of near-drowning, including cerebral edema, anoxic/ischemia encephalopathy, cardiovascular collapse, cardiac dysraspiration, acute respiratory distress syndrome, or co-existing trauma
11. order and interpret diagnostic tests in a patient with suspected complications of near-drowning (recommended: arterial

blood gases, chest X-ray, complete blood count, electrolytes, electrocardiogram; additional: international normalized radio, partial thromboplastine time, urinalysis, drug screen, urine myoglobin).

109-8
June 2010

Facial Injuries

Rationale

Facial injuries have the potential to impact on both function and cosmetic appearance with resultant psychological effects. Additionally, life-threatening complications due to damage to the airway and central nervous system are possible.

Causal Conditions

1. Trauma (e.g., blunt, penetrating, crush injury)
2. Burns

Key Objectives

Given a patient with a facial injury, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular, assess and control vital functions and give management priority to life-threatening injuries.

Enabling Objectives

Given a patient with a facial injury, the candidate will

1. list and interpret critical clinical findings, including
   a. elicit a history about the nature and mechanism of injury;
   b. evaluate airway, cardiopulmonary and neurologic status;
2. list and interpret critical investigations, including
   a. those used to determine the nature and severity of facial injuries;
3. conduct an effective initial management plan, including
   a. outline the priorities in the treatment of the facial injury;
   b. outline and provide the initial treatment of the facial injury;
   c. address patient concerns regarding long-term complications (e.g., cosmetic appearance, effect on function);
   d. determine whether the patient requires specialized care or referral.

109-9
June 2010

Hand and/or Wrist Injuries

Rationale

Hand and/or wrist injuries are common problems. The impact of the injury on function depends upon the severity of the original injury, the initial care, and rehabilitation.

Causal Conditions

1. Damage to tendons (e.g., laceration, tendonitis)
2. Damage to nerves (e.g., carpal tunnel syndrome)
3. Damage to bones and/or joints (e.g., fracture, dislocation)

Key Objectives

Given a patient with a hand and/or wrist injury, the candidate will diagnose the cause, severity, and complications, and initiate an appropriate management plan.

Enabling Objectives

Given a patient with a hand and/or wrist injury, the candidate will

1. list and interpret critical clinical findings, including
   a. if a history of trauma is present, a thorough exploration of the mechanism and timing of injury;
   b. appropriate physical examination, including neurovascular assessment;
   c. if appropriate screen for risk factors for repetitive strain injury;
   d. an occupational and recreational history;
2. list and interpret critical investigations, including
   a. radiograph(s) of the affected bone(s) and joint(s), if indicated;
3. construct an effective and relevant initial management plan, with particular attention to
   a. referral for specialist care, if appropriate;
   b. involvement of other health professionals as indicated;
   c. if splinting is required, demonstration of proper "position of safety";
   d. appropriate analgesia;
   e. counselling regarding appropriate return to work or play;
   f. recognition of the potential for long-term impact on function.

109-10
June 2011

Head Trauma / Brain Death / Transplant Donations

Rationale

While most head trauma is mild and not associated with long-term sequelae, clinical examination may fail to detect serious intracranial injuries that are evident on radiological imaging. Therefore, it is imperative to recognize head injured patients that require additional diagnostic imaging. When brain death has occurred, organ transplantation should be considered.

Causal Conditions

1. Skull fracture, penetrating injury
2. Hemorrhage, hematoma (subdural, epidural, subarachnoid, shaken baby syndrome)
3. Cerebral contusion
4. Edema (midline shift)

Key Objectives

Given a patient with a head/brain injury, the candidate will diagnose the cause, severity and complications. In particular, the candidate will, based on the mechanism of injury and the clinical findings, determine the appropriate management plan and select appropriate imaging and ongoing surveillance. In case where brain death has occured, ensure that appropriate organ donation protocol be activated.

Enabling Objectives

Given a patient with a head/brain injury, the candidate will

1. list and interpret critical clinical findings, including those derived from
   a. a history aimed at determining if the head injury was severe, or associated with complication (e.g., mechanism of injury, loss of consciousness);
   b. a physical examination aimed at determining if the head injury was severe, or associated with complication (e.g., ecchymosis behind ear);
   c. a repeat history or examination aimed at detecting evolving pathology;
   d. clinical signs of brain death;
2. list and interpret critical investigations, including
   a. determination as to whether the patient requires urgent brain imaging;
   b. confirmation of brain death with appropriate investigations;
3. conduct an effective initial management plan, including
   a. determine if the patient requires specialized or urgent care;
   b. in a patient whose head injury has caused brain death, but whose heart is still beating, communicate this information to the transplantation team (or equivalent) if the deceased patient or the family have indicated a desire to donate organ(s);
   c. if there is no indication that organ donation has been considered, counsel the family about the possibility.

109-11
November 2013

Nerve Injury

Rationale

Peripheral nerve injuries often occur as part of more extensive trauma and often go unrecognized. Evaluation of these injuries is based on an accurate knowledge of the anatomy and function of the nerve(s) involved.

Causal Conditions

1. Compression, stretch
2. Contusion
3. Laceration

Key Objectives

Given a patient with a potential nerve injury, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, the candidate will identify the peripheral nerve involved, as well as the level and type of involvement.

Enabling Objectives

Given a patient with a potential nerve injury, the candidate will

1. list and interpret critical clinical findings, including:
   a. features on occupational history and physical examination that can help determine whether a peripheral nerve injury has occurred in the setting of other trauma;
   b. the specific nerve involvement;
   c. a differential diagnosis based on differentiation of a nerve injury from other neurologic disorders (e.g., non-traumatic neuropathies, central lesions);
2. list and interpret critical investigations, including
   a. tests used to diagnose the presence of a traumatic peripheral neuropathy;
3. construct an effective initial management plan, including
   a. listing indications for specialized care.

109-12
June 2011

Skin Wounds

Rationale

Physicians must be able to deal with skin and subcutaneous wounds which occur commonly.

Causal Conditions

1. Lacerations
2. Puncture wounds (e.g., bites, needle sticks)
3. Crush injuries
4. Other (e.g., avulsions, abrasions)

Key Objectives

Given a patient with a skin wound, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, prior to wound closure, the candidate will look for evidence of injuries involving important underlying structures and search for foreign bodies within the wound and evidence of contamination, as well as consider tetanus immunization.

Enabling Objectives

Given a patient with a skin wound, the candidate will

1. list and interpret critical clinical findings, including
   a. determination of the mechanism of injury, the nature and severity of the skin wound, the time elapsed since injury, and symptoms suggesting wound infection based on the history and the physical examination;
   b. signs and symptoms suggestive of underlying injury to tendon, nerve or blood vessel;
   c. risk of transmissible infection (e.g., HIV, rabies) from a bite;
   d. tetanus immunization status;
2. list and interpret critical investigations, including
   a. wound culture, if required;
   b. appropriate diagnostic imaging of underlying structures, if necessary (e.g., foreign material, bones);
3. construct an effective initial management plan, including
   a. determine the need for primary versus delayed closure;
   b. determine whether the patient requires specialized care;
   c. provide appropriate medical and surgical care of superficial wounds;
   d. determine the need for antibiotic or immunization prophylaxis;
   e. provide appropriate management in case of a puncture wound (e.g., needlestick, animal bite), including mandatory reporting.

109-13
June 2011

Spinal Trauma

Rationale

Traumatic spinal cord injuries may have life-altering effects on patient, family, and community. Initial immobilization and maintenance of airway and ventilation can limit further injuries.

Causal Conditions

1. Traumatic (e.g., fracture/dislocation of vertebral column, penetrating injury)
2. Acute disc rupture

Key Objectives

Given a patient with spinal trauma, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. Particular attention should be paid to initial immobilization and maintenance of airway and ventilation.

Enabling Objectives

Given a patient with spinal trauma, the candidate will

1. list and interpret critical clinical findings, including
   a. status of airway and respiratory function before ensuring protection;
   b. information from history and examination performed as the patient is being immobilized;
   c. history about the mechanism of injury and the presence of symptoms and physical signs of spinal injury;
   d. results of a complete neurological examination aimed at determining the function of major cranial and peripheral nerves;
   e. consideration of the fact that spinal injuries commonly occur in association with other serious injuries;
2. list and interpret critical investigations, including
   a. diagnostic imaging for assessment of spinal stability, while keeping in mind that such tests should be deferred until the patient has been stabilized and immobilized;
3. construct an effective initial management plan, including
   a. initiate and maintain spinal immobilization;
   b. perform catheterization of the bladder if indicated;
   c. initiate proper medical therapy;
   d. counsel and support patient and family;
   e. refer the patient for specialized care (e.g., surgical care, rehabilitation), if necessary.

109-14
June 2011

Urinary Tract Injuries

Rationale

Urinary tract injuries are usually blunt rather than penetrating. They may affect the kidneys and/or the collecting system and may lead to life-threatening bleeding.

Causal Conditions

1. Kidney (see BLOOD IN URINE/HEMATURIA)
2. Bladder and urethra
   a. Distal urethra (e.g., straddle injuries bicycle riding, monkey bars)
   b. Proximal urethra/bladder (e.g., pelvic fracture, abdominal injury)

Key Objectives

Given a patient with a urinary tract injury, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, the candidate will consider trauma to bladder or posterior urethra in patients with pelvic fracture.

Objectives

Given a patient with a potential urinary tract injury, the candidate will:

1. list and interpret the critical clinical findings, including
   a. history data regarding the mechanism of the injury and symptoms (e.g., abdominal pain, difficulty voiding, blood in urine or at meatus);
   b. perineal swelling/bruising;
   c. prostate gland injury detected by digital rectal examination;
2. list and interpret critical investigations, including
   a. appropriate imaging, if required (e.g., retrograde urethrogram for urethral injury, cystogram for bladder injury, CT scan for renal injury);
3. construct an effective initial management plan, including
   a. initiate resuscitation of the injured patient and assess the patient's response to resuscitation;
   b. avoid repeated attempts at bladder catheterization when unsuccessful;
   c. initiate management of anterior urethral injury;
   d. refer the patient for specialized care, if necessary.

109-15
June 2011

Vascular Injury

Rationale

Vascular injuries are relatively common and may be limb, organ or life threatening.

Causal Conditions

1. Penetrating trauma (e.g., laceration)
2. Blunt trauma (e.g., contusion, spasm, compression)

Key Objectives

Given a patient with vascular injury, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. In particular, the candidate will act quickly to ensure revascularization.

Objectives

Given a patient with potential vascular injury, the candidate will

1. list and interpret critical clinical findings, including
   a. history and physical examination data focused on vascular injury (e.g., acute limb ischemia, compartment syndrome);
   b. consider blood loss that is not apparent on clinical examination (e.g., retroperitoneal hemorrhage);
2. list and interpret critical investigations, including
   a. assessment of pulses using Doppler probe, if appropriate;
   b. imaging studies to assess vessel integrity, if appropriate;
   c. assessment of compartment pressure, if required;
3. constuct an effective initial management plan, including
   a. initiate resuscitation assess the patient's response to resuscitation;
   b. control external bleeding, if required;
   c. ensure timely referral of the patient for specialized care, if required.

109-16
June 2011

Fractures and Dislocations

Rationale

Fractures and dislocations are common problems at any age. This may be an important presentation of physical abuse. Physicians have an important role in identifying risk factors and counseling for prevention.

Causal Conditions

1. Accidental injury
2. Non-accidental injury (e.g., abuse, violence)
3. Repetitive-use injury
4. Pathological conditions predisposing to injury (e.g., osteoporosis)

Key Objectives

Given a patient with a fracture or dislocation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should recognize situations in which there is an increased risk of fracture.

Enabling Objectives

Given a patient with a fracture or dislocation, the candidate will

1. list and interpret critical clinical findings, including
   a. predisposing factors contributing to injury (e.g., substance abuse);
   b. history of factors associated with pathological fractures (e.g., steroid use, malignancy);
   c. associated life-threatening injuries;
   d. exclusion of non-accidental causes (e.g., abuse);
2. list and interpret critical investigations, including
   a. appropriate diagnostic imaging;
   b. further investigation in the case of a pathologic bone fracture;
3. construct an effective initial management plan, including
   a. refer for urgent care in case of a limb- or life-threatening injury;
   b. determine if the patient requires specialized care;
   c. ensure effective management of the patient if he does not require a referral (e.g., appropriate duration of splinting and immobilization, appropriate frequency of follow-up);
   d. counsel and educate the patient and his family regarding prevention of injuries;
   e. follow regulations regarding reporting of suspected abuse;
   f. prevent and manage metabolic bone disease (e.g., osteoporosis), as the case may be.

110

Urinary Frequency

Please see Dysuria, Urinary Frequency and Urgency, and/or Pyuria 110-1
or Polyuria and/or Polydipsia 110-2

110-1
November 2013

Dysuria, Urinary Frequency and Urgency, and/or Pyuria

Rationale

Cystitis describes a common clinical syndrome of dysuria, urinary frequency and urgency, which is sometimes associated with suprapubic pain, and often found in the presence of pyuria. These symptoms, although generally indicative of bacterial cystitis, may also be associated with other infections of the urethra or vagina.

Causal Conditions

1. Urinary tract infection (e.g., cystitis, prostatitis, pyelonephritis)
2. Sexually transmitted infection
3. Non-infectious urinary tract inflammation (e.g., traumatic, interstitial cystitis, bladder carcinoma, bladder stones, urethral stricture)
4. External to lower urinary tract (vulvo-vaginitis)

Key Objectives

Given a patient who presents with dysuria, urinary frequency and urgency, urethral discharge and/or pyuria, the candidate will diagnose the cause, predisposing conditions, severity, and complications, and will initiate an appropriate management plan

Enabling Objectives

Given the patient with dysuria, urinary frequency and urgency, urethral discharge and/or pyuria, the candidate will

1. list and interpret critical clinical findings, including
   a. differentiation of urinary tract infections from non-infectious causes of cystitis and conditions outside the urinary tract with similar presentation;
   b. in case of recurring urinary tract infections, determination as to whether a predisposing condition may be present (e.g., urine stasis, presence of stone or foreign body);
   c. results of prostate and urethra examinations, as the case may be;
   d. a differential diagnosis based on age, gender and lifestyle;
2. list and interpret critical investigations, including
   a. urinalysis;
   b. urine culture and sensitivity;
   c. other investigations (e.g., vaginal and/or urethral swab, if indicated);
3. construct an effective initial management plan, including
   a. a selection of the most appropriate treatment for the underlying condition, including selection of appropriate antibiotics, if indicated;
   b. an assessment of the illness severity and the need for hospitalization;
   c. a determination as to whether additional investigation and/or referral are required;
   d. a brief outline of strategies for the prevention of recurrent urinary tract infections.

110-2
June 2010

Polyuria and/or Polydipsia

Rationale

Although not common, polyuria and/or polydipsia may be the presenting symptom(s) of a potentially serious underlying condition. It may be confused with urinary frequency, a common complaint.

Causal Conditions

1. Water diuresis
   a. Excessive intake
   b. Excessive loss - diabetes insipidus
2. Osmotic diuresis
   a. Sugar - diabetes mellitus
   b. Urea - chronic renal disease
   c. Salts - organic anions

Key Objectives

Given a patient who presents with polyuria and/or polydipsia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling objectives

Given a patient with polyuria and/or polydipsia, the candidate will

1. list and interpret critical clinical findings, including
   a. diagnose polyuria/polydipsia, causal factors, and severity, differentiating urinary frequency from polyuria;
   b. inquire about any personal or family history of diabetes;
   c. identify neurological features that may suggest intracranial pathology as a cause of central diabetes insipidus;
2. list and interpret critical investigations, including
   a. tests which distinguish between water and osmotic diuresis;
   b. screening for diabetes;
   c. use of a voiding diary, when appropriate;
3. construct an effective initial management plan, including
   a. management of the underlying cause;
   b. determination as to whether the patient requires specialized care.

111
September 2012

Urinary Tract Obstruction

Rationale

Lower urinary tract symptoms (LUTS) are common in men and women of all ages. The prevalence and severity of LUTS increase with age and they are a major burden for the aging population in particular. Although LUTS do not usually cause severe illness, they are a common motivation for seeking medical care, can considerably reduce quality of life, and may point to serious pathology of the urogenital tract.

Causal Conditions

1. Infections and inflammation (e.g., cystitis, prostatitis)
2. Structural (e.g., stones, tumors, prolapse, benign prostatic hypertrophy)
3. Medical conditions (e.g., diabetes mellitus, multiple sclerosis)
4. Drugs (e.g., anticholinergics, opioids)

Key Objectives

Given a patient with LUTS, the candidate will diagnose the cause, severity, predisposing conditions, and complications, and will construct an appropriate initial management plan.

Enabling Objectives

Given a patient with LUTS, the candidate will

1. list and interpret critical clinical findings, including those based on
   a. the determination as to which LUTS are present (e.g., storage, voiding, and post-micturition symptoms), including their time course, severity, and impact on quality of life;
   b. the identification of possible causes and associated co-morbidities through a proper assessment of the patients general medical history;
   c. the use of medication, including herbal and over-the-counter medicines;
   d. the presence or absence of systemic and uremic symptoms;
   e. a physical examination that is appropriately guided by the urological symptoms and other medical conditions (e.g., abdomen, pelvic exam, digital rectal exam);
2. recognize that appropriate initial investigations vary depending on the individual presentation, and list and interpret possible critical clinical investigations, including
   a. laboratory (e.g., renal function);
   b. imaging (e.g., ultrasound, computed tomography);
3. construct an effective initial management plan, including
   a. determination as to whether conservative management is appropriate in this case;
   b. appropriate pharmacotherapy;
   c. immediate bladder catheterization, if indicated;
   d. appropriate counseling and use of screening measures (e.g., prostate specific antigen [PSA]);
   e. determination as to whether urgent and/or specialized care is required.

112
November 2010

Vaginal Bleeding, Excessive/Irregular/Abnormal

Rationale

Vaginal bleeding is considered abnormal when it occurs at an unexpected time (before menarche or after menopause) or when it varies from the normal expected amount or pattern. It may be associated with significant morbidity, and mortality, depending upon the underlying cause.

Causal Conditions

1. Pre-menarchal (e.g., trauma, sexual abuse)
2. Pre-menopausal
   a. Ovulatory
      i. Inter-menstrual (e.g., oral contraceptive, benign growths)
      ii. Menorrhagia
      iii. Neoplasms-Coagulation disorders
      iv. Other (e.g., endometritis, hypothyroidism)
   b. Anovulatory
      i. Age related-Endocrine/Metabolic (e.g., thyroid)
      ii. Neoplasms (e.g., prolactinoma, ovarian tumor)
      iii. Other (e.g., polycystic ovary, weight loss/exercise/stress, structural disease)
   c. Pregnancy-related
3. Post-menopausal-Structural/Systemic
   a. Genital tract disease (exclude trauma)
   b. Systemic disease
   c. Drugs (e.g., hormone replacement therapy, anticoagulants)

Key Objectives

Given a patient who presents with abnormal, irregular or excessive vaginal bleeding, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

Enabling Objectives

Given the patient who presents with abnormal, irregular, or excessive vaginal bleeding, the candidate will

1. list and interpret critical clinical findings, including
   a. determine if the patient is hemodynamically stable prior to any other task;
   b. differentiate between bleeding related to or unrelated to pregnancy first;
   c. if pregnancy is ruled out, obtain information to determine the underlying cause (e.g., other bleeding, medications);
   d. perform an appropriate physical examination, including a pelvic examination unless contraindicated (e.g., placenta previa);
2. list and interpret critical clinical investigations, including
   a. complete blood count, pregnancy test and, in women with recent pregnancy, qualitative and quantitative beta

HCG;
   b. determination of ovulatory status and order clinically-indicated diagnostic tests;
   c. determination as to whether a referral for investigation is required;
3. construct an effective initial management plan, including
   a. determine if the patient requires urgent or specialized care;
   b. resuscitate patient if hemodynamically unstable;
   c. initiate first-line medical therapy, as appropriate, for control of abnormal vaginal bleeding and refer patients for specialized surgical care;
   d. when sexual abuse is suspected, outline legal responsibilities (e.g., mandatory reporting obligations);
   e. recognize the potential need for counseling and support for victims of sexual abuse.

113
November 2010

Vaginal Discharge / Vulvar Pruritus

Rationale

Vaginal discharge, with or without pruritus, is a common problem

Causal Conditions

1. Physiologic discharge and cervical mucus production
2. Non-physiologic
3. Genital tract infections
4. Genital tract inflammations (e.g., irritants)

Key Objectives

Given a patient who presents with vaginal discharge or vulvar pruritus, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will distinguish sexually transmitted infection (STI) from other causes of vaginal discharge or vulvar pruritus.

Enabling Objectives

Given a patient who presents with vaginal discharge or vulvar pruritus, the candidate will

1. list and interpret critical clinical investigations, including
   a. the precipitating or aggravating factors;
   b. the diagnosis of the likely cause of vaginal discharge and/or vulvar pruritus;
   c. the results of an appropriate abdominal and pelvic examination, including a speculum examination;
2. list and interpret critical investigations, including
   a. pH and wet or KOH smear;
   b. appropriate tests if the patient presents with purulent discharge;
3. construct an effective initial management plan, including
   a. recognize vulvovaginitis associated with sexual activity and counsel on risk reduction;
   b. initiate appropriate management plan (e.g., STI, non-STI causes);
   c. recognize the obligation to report to appropriate authority;
   d. refer the patient for specialized care, if indicated.

114
November 2004

Violence, Family

This Objective is no longer applicable. Please see 114-1 Child Abuse
or 114-2 Elder Abuse
or 114-3 Adult Abuse/Spouse Abuse

114-1
June 2010

Child Abuse

Rationale

Child abuse occurs when a caregiver whom a child trusts or depends on, compromises, either by acts of omission or commission, the safety and/or physical, emotional or sexual well-being of a child and may lead to significant morbidity and mortality.

Child abuse is a common, yet under-recognized and under-reported condition. Accurate and timely diagnosis of children who are suspected victims of abuse can ensure appropriate evaluation, investigation, and outcomes for these children and their families.

Causal Conditions

1. Physical abuse
2. Mental abuse
3. Sexual abuse
4. Emotional abuse
5. Neglect
6. Exposure to domestic violence

Key Objectives

The candidate should be aware of presentations in which a history of abuse should be considered. Given a child in whom a history of abuse is suspected, the candidate will construct an appropriate management plan with particular attention to issues of safety and prevention.

Given a child in whom a history of abuse is disclosed, the candidate will identify the cause, severity, complications, and contributing factors. An appropriate initial management and prevention plan should also be constructed.

Enabling Objectives

Given a child presenting with any injury, the candidate will recognize those injuries suspicious for abuse when considering the nature of the injury, the caregiver's explanation for the injury, and whether that explanation is supported by the characteristics of the injury and the child's developmental status.

Given a child in whom abuse is suspected or disclosed, the candidate will

1. list and interpret critical clinical findings, including
   a. key manifestations of abuse (e.g., sexually transmitted infections, developmental delay, emotional/behavioural problems;
   b. family dynamics, parental characteristics and social situation that may be contributing factors;
   c. other potential signs of abuse (e.g., refusal by parent to have child interviewed alone);
   d. potential mimics of child abuse (e.g., accidental injury, medical conditions);
   e. the need for an appropriate history and physical examination to look for further evidence of abuse (e.g., bruising,

scars);

2. list critical investigations, including
   a. radiologic studies directed at treating the current injury and investigating evidence of previous trauma;
   b. other investigations, as indicated (e.g., coagulation studies, toxicology);
3. construct an effective initial management plan, including
   a. diligent documentation;
   b. outlining strategies for ensuring the child's safety, including specifically;
      i. reporting to appropriate child welfare agency;
      ii. determining whether other children are at risk and whether they should be examined;
   c. referral to a pediatrician or hospital child protection team for further evaluation/opinion, if available.

114-2
November 2010

Elder Abuse

Rationale

Elder abuse is action or neglect causing harm or distress to an older person where there is an expectation of trust.

Causal Conditions

1. Physical abuse
2. Sexual abuse
3. Emotional or psychological abuse
4. Financial or material exploitation
5. Neglect (e.g., physical, social, emotional)

Key Objectives

Given an older person in a state of distress or unexplained findings, the candidate will inquire about potential elder abuse. In particular, the candidate will determine the level of immediate risk, identify potential contributing factors, and outline an appropriate management plan.

Objectives

Given a case of possible elder abuse, the candidate will

1. list and interpret critical clinical findings, including
   a. recognize potential signs of abuse (e.g., fear, malnutrition);
   b. recognize the importance of interviewing the patient alone;
   c. identify risk factors for abuse including the patient's support structure and social circumstances;
   d. assess the capacity of the patient to make personal care decisions;
2. list and interpret critical investigations, including, where appropriate,
   a. assessement by appropriate medical investigations;
   b. assessment by appropriate health care agencies;
3. construct an effective initial management plan, including
   a. ensure the patient is in a safe environment;
   b. involve other team members or agencies, if indicated (e.g., social worker);
   c. provide support and education to the caregiver, if necessary.

114-3
November 2013

Adult Abuse / Intimate Partner Abuse

Rationale

Adult or intimate partner abuse is a common problem that can occur in all partnerships. Abuse is often kept hidden by the victim and may be difficult to diagnose, yet it causes significant physical and emotional morbidity. It can also lead to the death of the abused spouse.

Causal Conditions

Abuse may be classified into several types:

1. Physical abuse
2. Psychological abuse
3. Emotional abuse
4. Social isolation
5. Sexual abuse
6. Economic

Key Objectives

Given a case of possible adult or intimate partner abuse, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. In particular, the candidate will assess immediate and short-term risk to the victim, and devise a safe and effective plan for the patient.

Enabling objectives

Given a case of possible adult or intimate partner abuse, the candidate will

1. list and interpret critical clinical findings, including those based on
   a. the identification of possible factors putting the patient at increased risk of abuse (e.g., pregnancy, threat to leave);
   b. whether the partner has risk factors for being violent (e.g., substance use);
   c. the varied nature of symptoms and signs that may indicate potential abuse (e.g., recurrent nature);
   d. the nature of the interaction between partners as well as the importance to interview and examine the patient alone;
   e. the level of immediate-and-short term danger for the individual as determined through an assessment of risk factors for lethality or serious injury;
2. list and interpret critical investigations, including
   a. the careful documentation of the location and nature of injuries and appropriate investigation of physical injuries via physical examination and other tests, as needed;
3. construct an effective initial management plan, including
   a. maintaining an empathic relationship;
   b. ensuring confidentiality and communicate exceptions;
   c. assisting the individual in devising a safety plan;
   d. giving information regarding access to transition housing, and support services;

e. arranging supportive follow-up.

115

Visual Disturbance/Loss

Please see Acute Visual Disturbance/Loss 115-1
or Chronic Visual Disturbance / Loss 115-2

115-1
November 2010

Acute Visual Disturbance/Loss

Rationale

Sudden decreases in visual acuity or visual field are symptoms which require urgent evaluation. The outcome may depend on early, accurate diagnosis and timely treatment. Many patients require an urgent ophthalmologic opinion.

Causal Conditions

1. Painless
   a. Vascular (e.g., retinal artery occlusion, giant cell arteritis)
   b. Neurologic (e.g., optic neuritis)
   c. Retinal (e.g., retinal detachment)
   d. Other (e.g., conversion disorders)
2. Painful
   a. Glaucoma
   b. Inflammatory (e.g., uveitis, corneal ulcer)
   c. Other (e.g., traumatic)

Key Objectives

Given a case of sudden decrease in visual acuity or visual field, the candidate will construct a differential diagnosis and recognize situations requiring urgent action. In particular, the candidate will recognize the need for urgent referral to an ophthalmologist.

Objectives

Given a case of sudden decrease in visual acuity or visual field the candidate will

1. list and interpret critical clinical findings, including
   a. determine the characteristics of the visual loss and other relevant medical history;
   b. conduct an appropriate eye examination;
   c. determine whether a vision threatening condition is present;
2. list and interpret critical investigations (e.g., imaging, erythrocyte sedimentation rate)
3. construct an effective initial management plan, including
   a. institute urgent medical therapy where appropriate;
   b. refer the patient for specialized care, if necessary.

115-2
November 2010

Chronic Visual Disturbance / Loss

Rationale

Chronic, slowly progressive visual loss is a significant health issue in the elderly population and groups at risk (e.g., diabetics).

Causal Conditions

1. Glaucoma
2. Cataract
3. Macular degeneration
4. Retinopathy due to chronic illness

Key Objectives

Given a case of chronic visual loss, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize the populations at risk of chronic visual loss and will institute screening and preventive measures.

Enabling Objectives

Given a case of a patient at risk of chronic visual loss, the candidate will

1. list and interpret clinical findings, including
   a. determine the characteristics of the visual loss and other relevant medical history;
   b. conduct an appropriate eye examination;
   c. determine whether a vision threatening condition is present;
2. list and interpret critical investigations (e.g., fundoscopic examination, visual fields, ocular pressure)
3. construct an effective initial management plan, including
   a. determine whether the patient is at risk and refer for appropriate screening, if such is the case;
   b. institute medical therapy, where appropriate;
   c. if indicated, refer the patient for specialized care in an appropriately timely manner.

116
June 2010

Vomiting and/or Nausea

Rationale

Nausea may occur alone, or along with vomiting, dyspepsia, and other gastrointestinal complaints. When prolonged or severe, vomiting may be associated with disturbances of water and electrolyte balance that may require correction prior to other specific treatment.

Causal Conditions

1. Gastrointestinal system
   a. Esophagus/Stomach/Duodenum (e.g., obstruction, gastroenteritis, reflux, gastroparesis, peptic ulcer disease)
   b. Small bowel/Colon (e.g., acute infectious enteritis, obstruction, inflammatory bowel disease, neoplasm)
   c. Hepato-biliary disease or pancreatic disease (e.g., acute hepatitis / pancreatitis / cholecystitis)
   d. Peritoneal irritation (e.g., appendicitis)
2. Central nervous system
   a. Increased intracranial pressure (e.g., infection, trauma, tumor)
   b. Vestibular nerve lesions
   c. Brain stem lesions
   d. Psychiatric/Psychological conditions
3. Other
   a. Endocrine and/or metabolic (e.g., diabetes, hypercalcemia, pregnancy)
   b. Cancer
   c. Sepsis (e.g., pyelonephritis, pneumonia)
   d. Drugs and toxins (e.g., chemotherapy, food poisoning)
   e. Miscellaneous (e.g., acute myocardial infection, uremia)

Key Objectives

Given a patient with vomiting and/or nausea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, candidates should recognize that important causes of nausea and vomiting (e.g., raised intracranial pressure, metabolic conditions, myocardial infarction) arise outside of the gastrointestinal system.

Enabling Objectives

Given a patient with nausea and/or vomiting, the candidate will

1. list and interpret critical clinical findings, including
   a. obtain a history for non-gastrointestinal causes (e.g., medication history, neurological disease, cardiac ischemia, metabolic conditions);
   b. obtain a complete review of gastrointestinal symptoms;
   c. physical examination targeting the gastrointestinal system, and salient findings in other systems suggesting need for urgent intervention (e.g., papilledema, volume status);

2. list and interpret critical investigations to delineate both causes and effects
   a. serum electrolytes, creatinine, calcium, glucose, cortisol;
   b. more targeted investigations (e.g., head imaging, cosyntropin stimulation test), if indicated;
   c. more specialized gastrointestinal testing, if indicated;
3. construct an effective initial management plan, including
   a. outline management plan targeting condition identified as causative, understanding that in some patients no cause will be found;
   b. recommend the appropriate use of commonly used anti-nausea/anti-emetic medications.

117
June 2010

Weakness, Paralysis, Paresis, and/or Loss Of Motion

Rationale

Many patients who complain of weakness are not objectively weak when muscle strength is formally tested. A careful history and physical examination will permit the distinction between true muscle weakness and non-muscular systemic causes.

Causal Conditions

1. Objective muscle weakness
   a. Generalized
      i. Myopathies (e.g., muscular dystrophy, inflammatory, metabolic)
      ii. Neuromuscular junction disorders (e.g., myasthenia gravis, botulism)
      iii. Peripheral neuropathies (e.g., diabetic, alcoholic, genetic, toxic, medication-induced; Guillain-Barré syndrome, B12 vitamin deficiency)
      iv. Anterior horn cell involvement (e.g. amyotrophic lateral sclerosis, polio, West Nile syndrome)
   b. Localized or Regional
      i. Upper motor neuron disease of the spinal cord and/or brain: (e.g., stroke, multiple sclerosis, cancer, abscess, trauma)
      ii. Peripheral neuropathies (e.g., diabetes, vasculitis, local compression, radiculopathy)
2. Chronic illness (e.g., cardio-pulmonary, anemia, infection, malignancy)
3. Depression
4. Deconditioning
5. Conversion disorder

Key Objectives

Given a patient with weakness, paralysis, paresis and/or loss of motion, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan, in particular identifying a patient possibly having an acute stroke.

Objectives

Given a patient with weakness, paralysis, paresis and/or loss of motion, the candidate will

1. list and interpret critical clinical findings, including
   a. determine whether the weakness is localized, regional or generalized;
   b. perform a comprehensive neurological and musculoskeletal examination;
   c. determine the neuroanatomic site of the cause of weakness;
2. list and interpret critical investigations, including
   a. tests based on the history and physical findings that are directed towards establishing an underlying cause;
   b. imaging testing in an acute situation (e.g., head or spine magnetic resonance imagery or computerized tomography, cerebral angiogram, carotid doppler);
   c. electromyography or muscle biopsy, if indicated;

3. construct an effective initial management plan, including
   a. in case of acute stroke;
      i. outline the indication for thrombolytic therapy
      ii. describe options for secondary prevention (e.g., antiplatelet agent) and risk factor modification (e.g., blood pressure control)
   b. outline a plan for rehabilitation in case of persistent weakness (e.g., paraplegia, hemiplegia);
   c. determine whether the patient requires specialized care.

118

Weight, Abnormal

Please see Weight Gain, Obesity 118-1
or Weight Loss / Eating Disorders / Anorexia 118-2
or Intrauterine Growth Restriction 118-3

118-1
June 2010

Weight Gain, Obesity

Rationale

Obesity is a complex multifactorial chronic disease developing from social, behavioral, physiologic, and metabolic interactions. It is a risk factor for a wide range of serious illnesses.

Causal Conditions

1. Increased energy intake
   a. Dietary (e.g., progressive hyperphagic, frequent eating, high fat diet, overeating)
   b. Social and behavioral (e.g., socioeconomic, psychological)
   c. Iatrogenic (e.g., drugs, hormones, hypothalamic surgery)
2. Decreased energy expenditure (e.g., sedentary lifestyle, smoking cessation)
3. Neuroendocrine (e.g., hypothyroidism, Cushing syndrome, polycystic ovarian syndrome)
   a. Genetic (e.g., Prader-Willi)
   b. Epigenetic

Key Objectives

Given a patient with weight gain or obesity, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, he will determine the degree and pattern of obesity, exclude primary treatable causes, and assess the risk of associated morbidity and mortality.

Enabling Objectives

Given a patient with weight gain or obesity, the candidate will

1. list and interpret critical clinical findings, including
   a. assess the for the presence of obesity using defined criteria in adult and pediatric populations;
   b. assess the risk of morbidity and mortality by determining age at onset of obesity, duration, and weight gain after 18 years of age, amount of central adiposity, and gender;
   c. perform a measurement of waist circumference or waist to hip ratio and calculate body mass index;
   d. determine whether co-morbid conditions are present (e.g., hypertension, diabetes mellitus, dyslipidemia, sleep-apnea, hirsutism, amenorrhea);
2. list and interpret critical investigations, including
   a. investigation for a neuroendocrine cause of obesity, if required;
   b. appropriate laboratory investigations to screen for co-morbid conditions and complications;
3. construct an effective initial management plan, including
   a. formulate a management plan consistent with an emphasis on long-term treatment and a multidisciplinary approach, if indicated;
   b. list the modalities of treatment for obesity including increased energy expenditure through exercise, decreased energy intake through healthy diets and behavior modification;
   c. discuss indications, risks, and benefits of anti-obesity drugs and bariatric surgery;

d. demonstrate sensitivity to social and psychosocial consequences of obesity.

118-2
November 2010

Weight Loss / Eating Disorders / Anorexia

Rationale

Weight loss may be a symptom of a serious underlying condition.

Causal Conditions

1. Decreased nutritional intake
   a. Psychiatric disease (e.g., anorexia nervosa, bulimia)
   b. Medical disease (e.g., chronic illness, esophageal cancer)
   c. Illicit drugs or medications (e.g., alcohol, opiates, cocaine, amphetamines, anticancer)
2. Increased energy expenditure
   a. Hormonal (e.g., hyperthyroidism)
   b. Chronic illness (e.g., chronic obstructive pulmonary disease, congestive heart failure)
   c. Malignancy
   d. Infection
   e. Excessive physical activity (e.g., runners)
3. Caloric loss
   a. Malabsorption (e.g., diarrhea)
   b. Diabetes

Key Objectives

Given a patient with weight loss, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will investigate for underlying medical conditions where appropriate.

Enabling Objectives

Given a patient with weight loss, the candidate will

1. list and interpret critical findings, including
   a. identify the primary mechanism of the weight loss (e.g., decreased nutritional intake, increased expenditure);
   b. recognize the features of anorexia nervosa where present;
   c. identify the medical consequences of the weight loss;
2. list and interpret critical investigations, including
   a. assessment of the nutritional status of the patient, including appropriate laboratory investigations;
   b. investigation of potential underlying medical condition (e.g., blood glucose, thyroid-stimulating hormone);
   c. investigation of social and family history (psychosocial stressors);
3. construct an effective initial management plan, including
   a. initiate nutritional support or counseling, where needed;
   b. initiate treatment of underlying medical condition, if appropriate;
   c. refer the patient for specialized care, if necessary.

118-3
June 2011

Intrauterine Growth Restriction

Rationale

Intrauterine growth restriction is a pathological limitation of fetal growth. Intrauterine growth restriction (IUGR) is an important risk factor for pre- and post-natal morbidity and mortality. It is also a risk factor for atypical child development and adult health problems such as hypertension and diabetes. Infants with IUGR must be distinguished from infants who are constitutionally small for gestational age (SGA) but otherwise well.

Causal Conditions

1. Maternal (e.g., nutritional status)
2. Fetal (e.g., genetic syndrome, intra-uterine infection)
3. Placental (e.g., maternal smoking

Key Objectives

Given a pregnant patient with abnormal fetal growth, or a newborn with low birth weight, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to identification of modifiable risk factors for IUGR early in pregnancy, routine monitoring of fetal growth throughout pregnancy to identify the need for specialized obstetrical management, and careful evaluation of a neonate who is small for his gestational age to detect a possible case of IUGR and assess potential causal conditions.

Enabling Objectives

Given a pregnant patient with abnormal fetal growth, or a newborn with low birth weight, the candidate will

1. list and interpret critical clinical findings, including
   a. recognition of risk factors for IUGR;
   b. routine monitoring of fetal growth through physical examination;
   c. evaluation of a low birth weight infant to determine whether the case is one of IUGR or of a neonate who is constitutionally small for his gestational age, paying particular attention to features on history and physical examination that are indicators of potential causal conditions;
2. list and interpret critical investigations, including
   a. indications for pregnancy investigations to assess fetal growth and well-being (e.g., biophysical profile, Doppler);
   b. indications for neonatal investigations for causal conditions of IUGR (e.g., karyotype);
3. construct an effective initial management plan, including
   a. referral of the patient for specialized obstetrical investigation and management, if indicated;
   b. initiation of resuscitation of a distressed neonate, as required;
   c. referral for specialized pediatric care and developmental surveillance in the case of IUGR;
   d. counseling and education of the patient regarding risk factors, management, and sequelae of IUGR, as appropriate.

119-1
November 2004

Lower Respiratory Tract Disorders

This Objective is no longer applicable. Please use 18 Cough or 27 Dyspnea

119-2
November 2004

Upper Respiratory Tract Disorders

This Objective is no longer applicable. Please use 18 Cough or 27 Dyspnea

120
November 2010

White Blood Cells, Abnormalities of

Rationale

White blood cell (neutrophils and lymphocytes) abnormalities include abnormalities of number (leukocytosis or leukopenia), and of function. Leukocystosis and leucopenia may occasionnaly indicate serious and potentially urgent medical problems. Congenital white cell dysfunction is rare, but acquired dysfunction is associated with common medical problems.

Causal conditions

1. Leukocytosis
   a. Reactive (e.g., bacterial infection, infectious mononucleosis)
   b. Neoplastic (e.g., leukemias)
2. Leukopenia
   a. Increased destruction (e.g., bacterial infection, human immunodeficiency virus)
   b. Decreased/Ineffective production (e.g., marrow suppression)
3. Leukocyte dysfunction (e.g., HIV, chronic granulomatous disease)

Key Objectives

Given a patient with a white blood cell abnormality, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. In particular, attention should be paid to distinguishing those conditions which are life threatening (overwhelming sepsis, acute leukemia, febrile neutropenia) and require immediate treatment from those that are non-urgent.

Enabling Objectives

Given a patient with abnormalities of white blood cells, the candidate will

1. list and interpret the critical clinical findings, including
   a. take a relevant history and perform an appropriate physical examination;
   b. distinguish urgent, life-threatening situations requiring immediate intervention;
2. list and interpret the critical investigations, including
   a. the context of the clinical presentation (e.g., monospot, bacterial cultures);
3. construct an effective initial management plan, including
   a. refer the patient for further specific investigation or specialized care (e.g., bone marrow biopsy, neutrophil function test), if necessary;
   b. initiate treatment of underlying conditions.

121

Legal, Ethical and Organizational Aspects of Medicine

Please see Consent 121-1
or Truth Telling 121-2
or Negligence 121-3
or Confidentiality 121-4
or Legal System 121-5

121-1
June 2011

Consent

Rationale

Consent is an essential requirement for the initiation, continuation and termination of medical treatment or medical research.

Key Objectives

Given the necessity for consent, the candidate will be able to take the necessary steps in order to obtain valid legal and ethical consent for the proposed action, taking into account issues related to decision-making capacity, information sharing, the form of consent, limitations and exceptions to the requirement of consent.

Enabling Objectives

Given the need to obtain consent, the candidate will

1. list important aspects for the determination of capacity to consent (e.g., cognitive impairment, coercion);
2. identify steps that must be taken to obtain consent where there is a lack of capacity (e.g., substitute decision maker, court order);
3. identify the information that must be provided in order to ensure informed consent has been obtained;
4. differentiate the circumstances in which implied consent is acceptable;
5. identify issues related to written and verbal consent including appropriate documentation;
6. identify exceptions to the requirement for consent (e.g., mandatory reporting, risk of harm to others;
7. describe the limitations and scope of the consent obtained in the particular situation (e.g., procedural limitation, duration of consent).

121-2
June 2011

Truth Telling

Rationale

Truth telling is an essential component to every patient encounter and a basic ethical behavior in a physician's daily practice.

Key Objectives

Given a patient or professional encounter, the candidate must honestly and accurately convey relevant information and explanations to patients, their families and other members of the health care team.

Enabling Objectives

Given a patient or professional encounter, the candidate will

1. adhere to the legal and ethical basis for truth telling;
2. recognize the personal and cultural context of the patient;
3. use clear language to communicate and check for understanding;
4. identify challenging situations and communicate accurately and effectively in such circumstances (e.g., delivering bad news, addressing medical error);
5. recognize when it is necessary to disclose personal beliefs or values that could be in conflict with patient choices.

121-3
June 2011

Negligence

Rationale

Negligence in providing care may result in legal liability.

Key Objective

Given a situation where a patient complains of negligent medical care, or the candidate is aware of negligence, the candidate will consider the standard of care, the possibility of injury resulting from the care, and know what action to take in the circumstances.

Enabling Objectives

Given a situation where there may have been negligence, the candidate will

1. list the elements required to prove negligence (e.g., a duty of care, a breach of the standard of care, a resultant harm and a connection between the harm suffered and the breach of the standard of care);
2. differentiate between the standard of care required based on the level of responsibility of the health care provider;
3. initiate appropriate communications with the patient, the health facility and the rest of the health care team regarding the outcome with an understanding of relevant legislation, vicarious liability and ethical duties of disclosure;
4. initiate communications with the liability insurance carrier, such as the Canadian Medical Protective Association (CMPA).

121-4
June 2011

Confidentiality

Rationale

Confidentiality is a key component of the patient-physician relationship. The need for confidentiality is present in every encounter.

Key Objective

The candidate will recognize the need for confidentiality and the circumstances where confidentiality must or may be breached.

Enabling Objectives

Given that confidentiality is a key component of the practice of medicine, the candidate will

1. discuss the ethical and legal aspects of confidentiality;
2. recognize the current statutory and legislative basis for confidentiality and its application to medical records and all forms of communication;
3. list the exceptions to confidentiality and when it must or may be breached (e.g., duty to report, prevention of harm);
4. recognize the limitations in the consent to release information (e.g., extent of information released to third parties, time restrictions);
5. recognize the duty to inform patients about mandatory disclosure (e.g., communicable diseases);
6. recognize the challenges to confidentiality posed by electronic medical records.

121-5
June 2011

Legal System

Rationale

Knowledge of the Legal System in Canada allows the physician to provide care to patients in the context of federal, provincial and local laws and regulations.

Key Objectives

Given a situation that may result in the involvement of the legal system, the candidate will be able to identify the appropriate laws which apply to the particular situation and access and engage with the appropriate body.

Enabling Objectives

The candidate will

1. recognize the various sources of laws in Canada (e.g., federal and provincial statutes, the common law, the Civil Code of Québec, licensing and regulatory bodies) as they apply to the practice of medicine;
2. be familiar with the principles underlying the important court, tribunal and other legal decisions that affect the practice of medicine;
3. identify situations in which consultation or referral are appropriate (e.g., legal advice, child protection services).

Epistaxis

Rationale

Epistaxis, or nasal bleeding, is a common problem. The majority of episodes are idiopathic and self-limiting. Affected individuals usually do not seek medical attention. Despite this, it is still a common reason for seeking medical attention in both acute and primary care settings. Infrequently, epistaxis can be associated with serious underlying illness, massive or difficult to control bleeding, and even death.

Causal Conditions

1. Idiopathic (most cases)
2. Environmental irritants (e.g., cold, dry)
3. Trauma (e.g., nose picking, domestic violence)
4. Structural deformities (e.g., septal deviations, chronic perforations)
5. Inflammatory (e.g., upper respiratory tract infection, allergies)
6. Irritants (e.g., substance abuse, foreign body reaction)
7. Medications (e.g., anticoagulants, ginseng)
8. Systemic causes (e.g., hemophilia, hematologic malignancies, chronic alcohol intake)

Key Objectives

Given a patient with epistaxis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. An attempt should be made to directly visualize the source of bleeding to confirm the diagnosis and determine the best treatment.

Enabling Objectives

Given a patient with epistaxis, the candidate will

1. list and interpret relevant clinical findings, including those derived from an appropriate history and physical examination performed with particular attention to:
   a. airway and hemodynamic status (prior to obtaining a focused history);
   b. the history of the initial presentation of the bleeding, as well as previous bleeding episodes and their treatments;
   c. co-morbid conditions that suggest a possible underlying cause or incur an increased risk of complications;
   d. family history of bleeding;
   e. a thorough medication and substance use history, including over-the-counter and alternative therapies, illicit substances, and alcohol use;
   f. determining the source of bleeding as either anterior or posterior by direct visualization with particular attention to Little's area;
2. based on the history, physical examination and amount of blood loss, list and interpret indicated investigations (e.g., complete blood count, coagulation studies);
3. construct an effective initial management plan which may include any or all of the following:
   a. adherence to universal precautions for the transmission of infectious disease;

b. ensuring airway and hemodynamic stability prior to obtaining a focused history;
c. fluid resuscitation if volume depletion is suspected;
d. blood transfusion;
e. initial management strategies for both anterior and posterior sources of bleeding (e.g., pressure, cauterization nasal packing);
f. post-epistaxis care and follow-up;
g. determination as to whether the patient requires a referral for specialized care.