1. "The" Blood Test for Testicular Carcinoma

What is "the" diagnostic blood test specific for the diagnosis of testicular carcinoma?

Submitted by: D. Kaiparth, MD, Pictou, Nova Scotia

The relevant serum tumour markers that support the diagnostic work-up for testicular carcinoma are α-fetoprotein (AFP), the ß subunit of human chorionic gonadotropin (ß-hCG) and lactate dehydrogenase (LDH). None of these markers are sufficiently sensitive or specific enough to establish the diagnosis of testicular carcinoma in the absence of histologic confirmation. ß-hCG is elevated in the majority of non-seminomas and occasionally in seminomas. LDH may also be elevated in either subtype. However, AFP is frequently elevated in non-seminomas but is not elevated in seminomas. The degree of marker elevation at diagnosis is also an important prognostic factor.

Answered by: Dr. Sharlene Gill

2. Depot Medroxyprogesterone Acetate and Osteoporosis

Depot medroxyprogesterone acetate and osteoporosis: What is your advice for adolescents?

Submitted by: J. Moreau, MD, Barrie, Ontario

Depot medroxyprogesterone acetate, as an injectable contraceptive, has been implicated in lowering BMD in adolescents. However, the long-term impact of this result is unclear.

There are no trials of depot medroxyprogesterone acetate that specifically address the issue of fractures and none of the studies were powered to look at fracture incidence as an outcome. Therefore, concluding that depot medroxyprogesterone is harmful and should not be recommended to patients is difficult because there is no evidence to suggest it would increase fracture risk.

With regards to counselling on the use of depot medroxyprogesterone, each patient should be considered individually. If the benefits outweigh the risks, from the point of view of compliance and medical contraindications to estrogen, then it should be considered. Patients should be counselled with regards to the benefits and side-effects of this medication and should actively participate in the decision making.

Resource

1. Lopez LM, Grimes DA, Schulz KF, et al: Steroidal Contraceptives: Effects on Bone Fractures in Women. Cochrane Database Syst Rev 2006; (4):CD006033.

Answered by: Dr. Sabrina Fallavollita; and Dr. Michael Starr

3. Looking at Dyspepsia

What are the current management and investigation strategies for dyspepsia?

Submitted by: Rasha Wahba, MD, Mississauga, Ontario

Dyspepsia is a chronic discomfort in the upper abdomen. It is an important clinical entity since recent surveys suggest that as many as 15% to 30% of the general population experience dyspepsia over the course of a year.[1] Patients complain of variable symptoms, including an uncomfortable feeling in the epigastrium, bloating, fullness, early satiety, nausea and even reflux-type pain.

Organic causes of dyspepsia have been identified, including peptic ulcer disease, gastroesophageal reflux and malignancy.[2] However, in up to 50% to 60% of patients, the etiology of the epigastric pain has no identifiable cause and is referred to as "non ulcer dyspepsia (NUD) or functional dyspepsia."[1] Dyspeptic patients > 55-years-of-age, or those with alarm features, should undergo endoscopic evaluation.

Alarm features for esophageal and gastric pathology include:[2-4]

- Age > 55 years with a high incidence of gastric cancer
- Unintentional weight loss
- Recurrent vomiting
- Progressive dysphagia
- Odynophagia
- Unexplained anemia
- GI bleeding
- Previous history of GI cancer
- Family history of gastric or esophageal cancer
- Jaundice
- Palpable mass on physical exam

In all other patients, there are two approaches. One recommendation is to test for *Helicobacter pylori (H. pylori)* using a noninvasive testing method. Positive results should be treated using standard first-line therapy. If eradication is successful but symptoms persist, or if patients test negative for *H. pylori*, a four to six week trial of proton pump inhibitors (PPIs) should be initiated. An alternative approach is to try a PPI before testing for *H. pylori*. If the patient fails to respond to these approaches then referral for endoscopy is suggested.[2,4]

There is also limited evidence for the use of prokinetics, psychological intervention and dietary modification in certain populations of patients who continue to have dyspepsia after appropriate investigation and management.[5]

References
1. Tack J, Lee KJ: Pathophysiology and Treatment of Functional Dyspepsia. J Clin Gastroenterol 2005; 39(supp 3):211-6.
2. Talley NJ, Vakil N: Guidelines for the Management of Dyspepsia. Am J Gastroenterol 2005; 100(10):2324-37.
3. Gillen D, McColl KE: Does Concern About Missing Malignancy Justify Endoscopy in Uncomplicated Dyspepsia Patients Aged Less Than 55?. Am J Gastroenterol 1999; 94(8):2329-30.
4. Delaney BC, Innes MA, Deeks J, et al: Initial Management Strategies for Dyspepsia. Cochrane Database Syst Rev 2000; (2):CD001961.
5. Fajardo NR, Cremonini F, Talley NJ: Frontiers in Functional Dyspepsia. Curr Gastroenterol Rep 2005; 7(4):289-96.

Answered by: Dr. Robert Bailey; and Ms. Jennifer Mihill

4. Is the Metabolic Syndrome a Form of Cushing Disease?

Is the Metabolic syndrome a mild form of Cushing disease?

Submitted by: A. J. B. Nazareth, MD, Toronto, Ontario

The Metabolic syndrome and Cushing disease are two separate conditions that may have many similarities. The Metabolic syndrome* is a highly prevalent condition characterized by a distinctive constellation of abnormalities including dysglycemia/Type 2 diabetes, abdominal obesity, hypertension, low HDL-C, elevated triglycerides and insulin resistance.

Cushing disease is a rare condition with excess glucocorticoids that is characterized by obesity, hypertension, dysglycemia/Type 2 diabetes, plethoric facies, purple striae, muscle weakness and bruising.

The diagnosis of Cushing syndrome is confirmed by demonstrating hypercortisolism by various means which may include a dexamethasone suppression test and/or demonstrating excess urinary steroids.

* For a list of resources citing various definitions of the Metabolic syndrome, please contact **diagnosis@sta.ca.**

Answered by: Dr. Vincent Woo

5. Operating for Aortic Stenosis

When is it too late to operate for aortic stenosis?

Submitted by: Jean-Robert Timothée, MD, Greenfield Park, Quebec

Once patients with severe aortic stenosis develop symptoms of angina, syncope/lightheadedness or heart failure (HF), they have an average survival of two to three years. In the absence of other major comorbidities (*i.e.*, cancer, dementia, renal failure, severe chronic obstructive pulmonary disease or advanced frailty) surgery prolongs life and improves symptoms in patients with severe symptomatic aortic stenosis. Left ventricular (LV) systolic function may deteriorate late in the course of aortic stenosis but improves after aortic valve replacement as long as there is no associated cardiomyopathy.

HF in patients with severe aortic stenosis is usually secondary to LV diastolic dysfunction from LV hypertrophy and increased systolic work.

The bottom line is that it is never too late to operate in a patient with severe aortic stenosis, regardless of the age, unless the patient has other significant medical problems. If this is case, certain patients may be eligible for percutaneous aortic valve replacement. However, this procedure is experimental with St. Paul's Hospital in Vancouver (Dr. John Webb) having the most experience in Canada.

Resource

1. Webb JG, Pasupati S, Humphries K, et al: Percutaneous Transarterial Aortic Valve Replacement in Selected High-Risk Patients With Aortic Stenosis. Circulation 2007; 116(7):755-63.

Answered by: Dr. Bibiana Cujec

6. Investigating Creatinine Levels in the Elderly

What creatinine level would you investigate (with ultrasound) in those > 70-years-of-age?

Submitted by: E. J. Franczak, MD, Scarborough, Ontario

The key concept is that creatinine does not increase with age. Over the age of 60, people lose approximately 1 ml/minute/year of glomerular filtration rate (GFR); however, this is offset by a loss in muscle mass. Thereby, the creatinine should stay relatively the same. Any loss of GFR, rapid loss of GFR (a decrease by 20%), or gradual decline over two measurements warrants an evaluation.

An ultrasound, along with a urinalysis and basic bloodwork, should be part of that evaluation. The elderly are especially prone to obstruction (*i.e.*, benign prostatic hypertrophy, stones, malignancy) and in general, obstruction is a reversible cause of renal dysfunction. Furthermore, an ultrasound revealing small, atrophic kidneys suggests irreversible renal damage and patients should be managed to minimize the progression of chronic kidney disease.

Answered by: Dr. Manish M. Sood

7. Referral for Genetic Testing for the Breast Cancer Gene

When should you refer a patient for genetic testing for the breast cancer gene?

Submitted by: Helen Vasilikaki-Baker, MD, Montreal, Quebec

Recommendations for referral for genetic counselling are directed towards women whose family history is suggestive of an increased risk for deleterious mutations in the breast cancer susceptibility gene 1 (BRCA1) or BRCA2. Regrettably, there are no standardized referral criteria or empirical evidence concerning the level or risk for a BRCA mutation that would merit referral for genetic counselling. All women with a family history of breast or ovarian cancer that includes a first-degree or second-degree relative with a known mutation in BRCA1 or BRCA2 genes should be referred. Additionally, genetic counselling and evaluation for BRCA testing would also be appropriate in women with:

- A personal history of breast cancer diagnosed before age 35
- A personal history of breast and ovarian cancer diagnosed at any age
- Breast cancer and/or ovarian cancer in Ashkenazi Jewish families
- A family history that includes multiple cases of breast cancer and/or ovarian cancer

Resource

1. US Preventive Services Task Force: Genetic Risk Assessment and BRCA Mutation Testing for Breast and Ovarian Cancer Susceptibility: Recommendation Statement. Ann Intern Med 2005; 143(5):355-61.

Answered by: Dr. Sharlene Gill

8. Transcranial Magnetic Stimulation Therapy

Please comment on the efficacy and safety of repetitive transcranial magnetic stimulation in the treatment of depression.

Submitted by: **Rene Pottle, MD,** Halifax, Nova Scotia

Transcranial magnetic stimulation (TMS) is a noninvasive method to excite neurons in the brain. The excitation is caused by weak electric currents induced in the tissue by rapidly-changing magnetic fields (electromagnetic induction). This way, brain activity can be triggered or modulated without the need for external electrodes as is required in electroconvulsive therapy (ECT). Repetitive transcranial magnetic stimulation is known as rTMS.

Although research in this area is in its infancy, there is now some evidence that TMS is an effective treatment for:

- depression,
- obsessive-compulsive disorder,
- generalized anxiety disorder and
- auditory hallucinations.

There is reason to believe that rTMS could replace some ECT treatments currently used for severely depressed patients. In 2002, Health Canada approved rTMS therapy for drug-resistant depression.

Generally, TMS appears to be free from harmful effects. Research using animals and human volunteers has showed little effect on the body in general as a result of stimulation and examination of brain tissue submitted to thousands of TMS pulses has shown no detectable structural changes. It is possible, in unusual circumstances, to trigger a seizure in normal patients, but a set of guidelines which virtually eliminate this risk are available. Research continues, but TMS is certainly free of obvious side-effects, particularly when compared to those of ECT.

Resource

1. Gershon AA, Dannon PN, Grunhaus L: Transcranial Magnetic Stimulation in the Treatment of Depression. Am J Psychiatry 2003; 160(5):835-45.

Answered by: **Dr. Hany Bissada**

There is now some evidence that TMS is an effective treatment for depression, obsessive-compulsive disorder, generalized anxiety disorder and auditory hallucinations.

9. Taking Glucosamine Post Hip Replacement Surgery

Can patients on low molecular weight heparin (LMWH), post hip replacement surgery, take glucosamine?

Submitted by: D. Chambers, MD, Banff, Alberta

Glucosamine is a substrate for heparin sulfate, an endogenous anticoagulant of which heparin and LMWH are analogues. Theoretically, glucosamine could increase bleeding; however, clinically, this has not been an important association.

There are no reported cases of glucosamine causing increased bleeding in patients on heparin and LMWH.

Although the use of glucosamine alone has not been associated with significant bleeding in anticoagulated patients, the manufacturers still recommend caution. In Canada, there is much variability in the actual amount of glucosamine in the preparations available which would make quantifying an effect difficult.

Answered by: Dr. Sabrina Fallavollita; and Dr. Michael Starr

10. Treating Thyroid Storm

How do you treat thyroid storm?

Submitted by: Sanraj Basi, MD, Edmonton, Alberta

Thyroid storm is a life-threatening condition that usually develops when hyperthyroidism occurs in concert with another medical condition, such as pneumonia, gastroenteritis, *etc*. Patients are often elderly and present with extreme manifestations of hyperthyroidism, such as:

- Tachycardia
- Fever
- Agitation
- Restlessness
- Nausea
- Vomiting
- Volume depletion
- Confusion
- Heart failure

The history of hyperthyroidism may be long-standing and neglected.

Therapy is supportive and includes fluids, electrolyte replacement and treatment of the underlying medical disorder. Specific treatment of the hyperthyroidism includes large doses of anti-thyroid medications. Propylthiouracil may have theoretical advantages over methimazole. ß-blockade will treat many of the signs and symptoms and help the tachycardia. Corticosteroids, such as dexamethasone, have also been advocated. Sodium iodate or oral iodine has also been used in conjunction with the above measures.

In rare instances, plasmapheresis or charcoal hemoperfusion have been used.

Answered by: Dr. Vincent Woo

11. Homocysteine as a Cardiovascular Risk Factor

What is the current status of homocysteine as a cardiovascular risk factor?

Submitted by: Barry P. Conway, MD, Victoria, British Columbia

Hyperhomocysteinemia is generally accepted as an independent cardiovascular disease (CVD) risk factor. An elevated homocysteine level may be found in some individuals who suffer a MI and may be particularly helpful in explaining the premature occurence of a MI in the absence of other conventional risk factors, such as:

- hypertension,
- dyslipidemia,
- smoking, or
- diabetes mellitus.

Triple vitamin therapy with folic acid, vitamin B6 and B12 can effectively lower plasma homocysteine levels. Several large scale prospective clinical trials where designed to determine whether normalization of plasma homocysteine levels reduces the risk of coronary artery disease (CAD) events. Four of these trials were completed, presented and published over the past year. All were unanimous at showing no benefit whatsoever to lowering plasma homocysteine with triple vitamin therapy. One of these studies even suggested possible harm from triple vitamin therapy!

The homocysteine story nicely demonstrates the challenge posed by all modifiable CVD risk factors. While showing an independent association between the risk factor and CVD, developing reliable methods of measurement, as well as safe and effective methods to treat the risk factors, are important initial steps towards improving the incidence and outcome of CVD. This requires prospective large scale clinical trials which, as in the case of hyperhomocysteinemia, often yield surprising and disappointing results.

Accordingly, while measuring plasma homocysteine may still be usefull in selected patients at risk for CAD, there is no longer any role for the triple vitamin therapy of hyperhomocysteinemia.

Resources

1. Lonn E, Yusuf S, Arnold MJ, et al: Homocysteine Lowering with Foli Acid and B Vitamins in Vascular Disease. N Engl J Med 2006; 354(15):1567-77.
2. Bonaa KH, Njolstad I, Ueland PM, et al: Homocysteine Lowering and Cardiovascular Events After Acute Myocardial Infarction. N Engl J Med 2006; 354(15):1578-88.
3. Toole JF, Malinow MR, Chambless LE, et al: Lowering Homocysteine in Patients with Ischemic Stroke to Prevent Recurrent Stroke, Myocardial Infarction, and Death. The Vitamin Intervention for Stroke Prevention (VISP) Randomized Controlled Trial. JAMA 2004; 291(5):565-75.

Answered by: Dr. George N. Honos

Hyperhomocysteinemia is generally accepted as an independent CVD risk factor.

12. Relationship Between Anorexia, Growth Hormone and Somatostatin

What is the relationship between anorexia nervosa, growth hormone and somatostatin?

Submitted by: K. Howard, MD, Callander, Ontario

In emaciated anorexia nervosa patients, increased plasma levels of growth hormone (GH) and reduced plasma concentrations of GH binding protein (GHBP) are commonly present. Because GHBP represents the extracellular domain of GH receptors, its decrease in the blood reflects a reduced sensitivity to GH in anorexia nervosa, which may explain why hypersecretion of GH in anorexic patients does not result in acromegalic manifestations. Both GH and GHBP gradually return to normal levels with improved nutrition.

Somatostatin, which normally inhibits the secretion of GH, is produced by neuroendocrine neurons of the periventricular nucleus of the hypothalamus. It is believed that in anorexia nervosa, there is a reduced somatostatin tone because of the increased hypothalamic cholinergic activity; normally acetylcholine has a stimulatory action on hypothalamic somatostatin. Accordingly, it has been suggested that GH hypersecretion in anorexia nervosa may be partially linked to a reduced somatostatin tone.

Resources
1. Brambilla F, Monteleone P: Physical Complications and Physiological Aberrations in Eating Disorders. In: Maj M, Halmi K, et al (eds.): *Eating Disorders (WPA Series in Evidence & Experience in Psychiatry).* Volume 6. John Wiley & Sons Ltd, West Sussex, England, 2003.

Answered by: Dr. Hany Bissada

13. Biologic Agents in Psoriatic Arthritis

In psoriatic arthritis, are biologic agents indicated as first-line therapy?

Submitted by: M. I. Ravalia, MD, Twillingate, Newfoundland

Anti-tumour necrosis factor (TNF) (biologic) agents have been shown to be highly effective in controlling both skin and joint disease and in preventing bone erosions in psoriatic arthritis. Although there may be risks of side-effects, patients generally tolerate these medications well.

However, other disease-modifying agents (*e.g.*, methotrexate) have also been shown to be effective in a proportion of patients with psoriatic arthritis. Due to the huge cost of biologic agents, maximizing the effect of other less expensive agents is reasonable. It is for this reason that biologic agents are not indicated as first-line in psoriatic arthritis but are second-line agents, to be used in the setting of persistent disease activity and radiographic change.

Answered by: Dr. Sabrina Fallavollita; and Dr. Michael Starr

14. Investigating Chronic, Dry Cough

How do you investigate a chronic, dry cough in an otherwise healthy adult?

Submitted by: I. D'Souza, MD, Willowdale, Ontario

Chronic cough (cough lasting more than eight weeks) is an extremely common presenting complaint in the primary care setting. Recently published evidence-based clinical practice guidelines report that in adult non-smokers, with a normal chest roentgenogram not taking an ACE inhibitor, the most common causes of chronic cough include (alone or in combination):

- upper airway cough syndrome (formerly called post-nasal drip syndrome) due to various rhinosinus conditions,
- asthma,
- gastroesophageal reflux disorder (GERD) and
- non-asthmatic eosinophilic bronchitis.[1]

Chronic cough (cough lasting more than eight weeks) is an extremely common presenting complaint in the primary care setting.

Symptoms to suggest upper airway cough syndrome deserve an empiric trial of antihistamines and/or decongestant medications. If this fails to improve the cough, then sinus imaging is recommended. Asthma should be investigated with pre- and post-bronchodilator spirometry. If spirometry is non-diagnostic, then methacholine provocation testing is recommended. Empiric asthma therapy should be reserved for those unable to perform objective testing. Patients with symptoms of GERD warrant a trial of empiric anti-reflux medication. A 24-hour esophageal pH monitoring is reserved for those individuals who fail to improve on maximal medical treatment. Airway eosinophilia found on induced sputum or a bronchoalveolar lavage fluid sample, in the absence of other objective findings of asthma, raises the likelihood of non-asthmatic eosinophilic bronchitis. Unfortunately, this testing is not widely available.

For each of the conditions associated with chronic cough, cough may be the only symptom. A focused approach to the investigation and treatment of these common conditions is likely to result in a successful outcome in the majority of patients with chronic cough. Failure for cough to resolve with this management approach warrants referral to a cough specialist (*e.g.*, respirologist). Interested readers can find additional information from the American College of Chest Physicians at www.chestjournal.org.

Reference
1. Irwin RS, Baumann MH, Bolser DC, et al: Diagnosis and Management of Cough: ACCP Evidence-Based Clinical Practice Guidelines. CHEST 2006; 129(1 Suppl):1S-23S.

Answered by: Dr. Paul Hernandez

15. The Effect of Right Bundle Branch Block in an Athlete

Does a right bundle branch block affect cardiac output, volume per time, oxygen maximum (V02 max), *etc.* in an athlete?

Submitted by: Steve Sullivan, MD, Victoria, British Columbia

A right bundle branch block (BBB) on an ECG is occasionally noted in an otherwise healthy, asymptomatic individual and likely related to the relative fragility of the right bundle branch. It is important to note that right BBB does not confer an adverse prognosis in these patients or warrant any additional investigation for obstructive coronary disease, nor has it been associated with further need for a pacemaker when found in isolation. It has not been shown to significantly affect cardiac output or VO2 max in the athlete. The same cannot be said about left BBB which mandates further investigation in view of its strong association with underlying disease.

Answered by: Dr. Igal A. Sebag

16. Work-Up for an Extended Period of Amenorrhea

Initially, what work-up should be done for an extended period of amenorrhea in a woman in her 30s? How would this differ from a woman in her 40s?

Submitted by: Bhooma Bhayana, MD, London, Ontario

Assuming that pregnancy and structural abnormalities of the endometrium and outflow tract are eliminated, the simplest initial approach to investigating secondary amenorrhea is to measure circulating levels of follicle-stimulating hormone (FSH), luteinizing hormone, prolactin, estradiol and thyroid-stimulating hormone. This will allow a rational classification into the major groups of causes of amenorrhea:

- Hyperprolactinemia (high prolactin levels)
- Ovarian failure (high FSH levels)
- Anovulation with normal estrogen (polycystic ovary [PCO] and PCO-like conditions)
- Anovulation with low estrogen ("hypothalamic" amenorrhea or structural abnormalities in the hypothalamus or pituitary)
- Thyroid dysfunction, which can overlap with a number of the above groups

The ability to reach a diagnosis rapidly without the use of exogenous hormones has made the use of progestin challenge testing obsolete. Further investigation is beyond the scope of this brief review.

Women in their 40s are more likely to have menopause as a diagnosis for amenorrhea. A case can be made for a single measurement of FSH as a first step (in the assessment in women in this age range) but a normal FSH level would mean that further investigations, as above, would be necessary.

Answered by: Dr. David Cumming

17. GI Reactions to Food Allergies

Many patients have a supposed allergy to seafood/shellfish because they vomit. But, they have no other symptoms and skin tests are negative. Please comment.

Submitted by: Andrea Canty, MD, Saint John, New Brunswick

Certainly, isolated GI symptoms can be seen in IgE mediated food reactions. This can be often seen in milk and egg allergy in children. In a systemic IgE mediated reaction, any system can be affected, in isolation, or in any combination. Cardiovascular effects (*i.e.*, BP collapse) is more often seen in anaphylaxis in adults, whereas respiratory compromise is more often seen in children as the most severe manifestation of anaphylaxis. However, overlap is extensive and it is difficult to predict how allergic individuals will react upon exposure to a culprit allergen.

In children who are "growing out" of their egg allergy, skin tests can remain positive and lag behind the development of overall tolerance to egg. Presumably, the opposite can also occur; reactions may occur in the setting of early negative skin tests, with subsequent skin testing revealing the "conversion" to positive results. In the setting of persistently negative skin tests and radioallergosorbent testing in those patients with isolated GI symptoms, an IgE mediated mechanism may still be present, with local mucosal specific IgE in the GI tract involved in the response. Although possible, this would be quite rare. Other possibilities should be considered, such as food toxic reactions (*e.g.*, scombroid poisoning) and other non-immunologic causes (*e.g.*, intolerance).

Answered by: Dr. Tom Gerstner

18. Working-Up Symptomatic Hematuria

What would be the appropriate work-up for symptomatic hematuria in a healthy 32-year-old male?

Submitted by: Manon Belliveau, MD, Moncton, New Brunswick

Hematuria is classified as either macroscopic or microsopic. If macroscopic, investigation should include urine culture and two urine cytology samples, pyeloscan and cystoscopy. If hematuria is microscopic, investigation consists of urine culture, cytologies and an abdominal ultrasound. Normally, a cystoscopy is not recommended for microscopic hematuria in patients < 40-years-of-age unless patients have risks factors (*e.g.*, tobacco history, petrochemical exposition, *etc.*).

For this particular case, if the patient has lower urinary tract symptoms, a cystoscopy could be performed to exclude a urethral or vesical pathology.

Answered by: Dr. Hugues Widmer

19. Should ASA be Discontinued Before an Operation?

Should low-dose acetylsalicylic acid (ASA) be discontinued before an operation?

Submitted by: Dr. Eugene Kretzul, MD, Edmonton, Alberta

Patients with coronary artery disease (CAD) are on long-term low dose ASA to decrease their risk of MI and to improve survival. ASA causes irreversible inhibition of platelet cyclooxygenase and the effect on decreased platelet aggregation lasts for the lifetime of the platelet (five to 10 days).

The decision to withhold ASA depends on the perceived risk of MI or stroke as well as the risk/consequences of increased operative bleeding secondary to ASA. Some observational studies have shown increased hospital mortality in patients who had ASA withdrawn prior to coronary artery bypass graft (CABG) surgery and peripheral arterial surgery. Ideally, ASA should be continued during the perioperative period in patients with CAD, particularly if the patient had a recent MI or coronary stent deployment. I would be hesitant to discontinue ASA if either of these events occurred in the year prior to surgery. However, if the patient is on ASA for primary prevention of vascular events, the risk of MI or stroke over a short period of time is very low and it would be reasonable to stop ASA five to 10 days prior to surgery allowing new platelets to form.

The American College of Cardiology/American Heart Association guidelines do not recommend withholding ASA for either elective or non-elective CABG surgery after STEMI. It is not usually necessary to stop ASA in patients undergoing cataract surgery. On the other hand, patients undergoing central nervous system surgery should have ASA discontinued.

The situation is different for a patient with a coronary drug-eluting stent. There is a delayed risk of stent thrombosis (over one month) because of decreased stent endothelialization. Elective surgery should be delayed for one year following drug-eluting coronary stent deployment because dual antiplatelet therapy (ASA and clopidogrel) should not be discontinued. If surgery is urgent during this time frame, it should generally be done with the patient on clopidogrel and ASA.

Resources

1. Neilipovitz DT, Bryson GL, Nichol G: The Effect of Perioperative Aspirin Therapy in Peripheral Vascular Surgery: A Decision Analysis. Anesth Analg 2001; 93(3):573-80.
2. Antman EM, Anbe DT, Armstrong PW, et al: ACC/AHA Guidelines for the Management of Patients with ST-Elevation Myocardial Infarction: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). Circulation 2004; 110(5):588-636.
3. Grines CL, Bonow RO, Casey Jr DE, et al: Prevention of Premature Discontinuation of Dual Antiplatelet Therapy in Patients With Coronary Artery Stents. A Science Advisory From the American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography and Interventions, American College of Surgeons and American Dental Association, With Representation From the American College of Physicians. Circulation 2007; 115(6):813-8.

Answered by: Dr. Bibiana Cujec

20. Nutmeg Allergy

Please comment on nutmeg allergy.

Submitted by: Michael Keating, MD, Saint John, New Brunswick

Because of its name, many people with nut allergy believe that they should avoid nutmeg. This is not necessary because there is no evidence to suggest that people with nut allergy are at a higher risk of reacting to nutmeg. The incidence of nutmeg allergy is felt to be rare; however, not enough research has been carried out to be certain about how common a problem it is.

Nutmeg is the kernel of an apricot-like fruit and there is a theoretical possibility that there might be cross-reactivity with almond, which is also a fruit kernel.

If you are allergic to nuts and have never had a reaction to nutmeg, it is likely that nutmeg poses no greater risk than any other food.

Answered by: Dr. Tom Gerstner

21. Peak Season for Asthma

Why is the peak season for asthma exacerbations in early fall?

Submitted by: Steve Coyle, MD, Winnipeg, Manitoba

Asthma exacerbations are characterized by new or increased respiratory symptoms of:

- Dyspnea
- Chest tightness
- Wheeze
- Cough
- Sputum production

Typical triggers include:

- climate change,
- irritant and aeroallergen exposure and
- viral respiratory tract infections.

A number of epidemiological studies have demonstrated seasonal patterns in asthma exacerbations. The peak period for asthma exacerbations in countries in the northern hemisphere, particularly in children, clusters around week 39.[1] A prevailing theory is that the observed seasonal variation in asthma exacerbations relates to factors in autumn that favour transmission of respiratory viruses.[1] Therefore, it is especially important to ensure that patients with asthma are assessed for their level of disease control and are compliant with using their maintenance medications (*e.g.*, inhaled corticosteroids), particularly in early autumn.

Reference
1. Johnston NW, Sears MR: Asthma Exacerbations. 1: Epidemiology. Thorax 2006; 61(8):722-8.

Answered by: Dr. Paul Hernandez

22. Alternative Contraceptives

Are progestin-only containing contraceptives, such as depot medroxyprogesterone and levonorgestrel, suitable alternatives for patients at risk for deep vein thrombosis/pulmonary embolism?

Submitted by: Dr. S. Deacon, MD, Cranbrook, British Columbia

Depot medroxyprogesterone acetate progestin- only pills and levonorgestrel IUDs have no appreciable risk of initiating thromboembolic events and appear to be safe in women with an increased risk of thromboembolism. However, recommendations for their use in specific populations are usually based on extrapolations from other clinical situations.

In this case, the opinion is based on studies of thromboembolic events in unselected populations and measured changes in coagulation factors, in the absence of randomized controlled trials in patients with specific risk factors. Nevertheless, they would not be contraindicated.

Resources
1. Bigrigg A, Evans M, Gbolade B, et al: Depo Provera. Position Paper on Clinical Use, Effectiveness and Side Effects. Br J Fam Plann 1999; 25(2):69-76.
2. Gomes MPV, Deitcher SR: Risk of Venous Thromboembolic Disease Associated With Hormonal Contraceptives and Hormone Replacement Therapy. A Clinical Review. Arch Intern Med 2004; 164(18):1965-76.

Answered by: Dr. David Cumming

23. Starting Dialysis in Renal Insufficiency

At what point in renal insufficiency do you start dialysis?

Submitted by: Dr. Peter Noble, MD, Oshawa, Ontario

The level of renal function at which to commence chronic renal replacement therapy is controversial. There have been no randomized controlled trials to guide us and the largely observational trials that remain have provided variable results as to whether the timing of renal replacement has an influence on long-term survival.

Current Canadian guidelines recommend initiation of dialysis when the glomerular filtration rate (GFR) is < 6 ml/minute, or < 12 ml/minute with symptoms of uremia or malnutrition. Guidelines from other societies, including those from the National Kidney Foundation Kidney Disease Outcomes Quality Initiative and the European Renal Association, have subtle differences.

Undisputed is the fact that there is a survival benefit for those patients who have had a timely referral to a nephrologist.[1] Canadian guidelines recommend referral to a nephrologist when the estimated GFR is < 30 ml/minute/1.73 m^2. At this point in chronic kidney disease (Stage IV), the goals of therapy are to manage any complications (*i.e.*, anemia, aberrant calcium/phosphate metabolism) and to prepare the patient for renal replacement.

Reference
1. Kinchen KS, Sadler J, Fink N: The Timing of Specialist Evaluation in Chronic Kidney Disease and Mortality. Ann Intern Med 2002; 137(6):479-86.

Answered by: Dr. Chris Sathianathan; and Dr. Manish M. Sood