1. Safety of Bioidentical Hormones

Are bioidentical estrogens/progesterones in fact safer? Are there robust studies?

Submitted by: Ken Armstrong, MD, Niagara Falls, Ontario

There is no evidence that bioidentical hormones are safer than other preparations of estrogens or progesterones. Indeed, the compounded (nonpharmaceutically produced) bioidentical hormones may be substandard in terms of quality, leading to wide variations in absorption and, thus, blood levels (too high or low), with no data to demonstrate their safety or efficacy. Bioidentical hormones are derived from soy and plant extracts that are modified to be structurally identical to endogenous hormones, and they do exist in standard, pharmaceutically produced hormone replacement therapies that are proven to be efficacious. The belief is that hormones identical to those produced by the body are more “natural,” but there is no support for the claim that they are safer.1

Reference:

Answered by: Dr. Victoria Davis

2. Anaesthesia and Long-term Memory

Does anaesthesia affect long-term memory?

Submitted by: S. Chaudhry, MD, Weston, Ontario

There have been some reports that general anaesthesia can result in long-term memory loss, particularly in elderly individuals undergoing major surgery, such as coronary artery bypass grafting and joint replacement. However, general anaesthesia has no permanent effects on long-term memory.1 In some cases, a rare condition called central anticholinergic syndrome may cause a variety of non-specific symptoms, including increased somnolence, irritation, and mental difficulties, (i.e., forgetfulness, decreased energy, and trouble with concentration). However, in most cases, these symptoms resolve within a few days.

Reference:

Answered by: Dr. Abdul Qayyum Rana
3. Helicobacter pylori and Stomach Ulcers

Is there any link between Helicobacter pylori and stomach ulcers? Should we be screening any particular group of patients (who don’t have any symptoms)?

Submitted by: Christina Fisher, MD, Toronto, Ontario

Stomach ulcers include both gastric and duodenal ulcers. They are associated with two major factors: Helicobacter pylori infection of the gastric mucosa and the use of NSAIDs.

The link between H. pylori infection and ulcers has been well recognized throughout the world. Patients with gastric ulcers have H. pylori 70% of the time, while those with duodenal ulcers have the bacteria 90% of the time.1 Before the relationship between the bacteria and stomach ulcers was confirmed, it was proven that ulcers healed either spontaneously or with the use of acid-suppression medication. However, the ulcers recurred 50 to 80% of the time during the 6 to 12 months following initial ulcer healing.2 Eradication of H. pylori has significantly altered the incidence of ulcer relapse.

Patients without symptoms and without a history of ulcer disease are usually not tested for H. pylori infection. Patients with a family history or fear of gastric carcinoma, particularly those of East Asian, Mesoamerican, or Eastern European descent, in whom the incidence of gastric cancer may be increased, should be tested and, if found positive, should be treated.3,4

The only good H. pylori is dead H. pylori.

References

Answered by: Dr. Robert Bailey and Dr. Ahmed Almammar
Efficacy of Laser Therapy for Onychomycosis

Recent radio ads have advised the public to consider laser treatment for onychomycosis. Can you comment on the pros and cons of this treatment modality?

Submitted by: I.S. Crothers, MD, Port Coquitlam, British Columbia

Laser therapy for onychomycosis is still being studied. There are no randomized controlled trials examining laser therapy for onychomycosis, and there are no studies comparing laser treatment to medical therapy. At present, the gold standard for treating onychomycosis remains oral antifungal therapy, especially oral terbinafine.

The theoretical efficacy from laser therapy for onychomycosis is based on the fungi absorbing the laser light and converting the light energy into heat, destroying the mycelia. There are nonrandomized controlled studies that show efficacy in treating onychomycosis with lasers. However, the degree of reported clearing is variable, and there are no long-term studies looking at relapse rates post laser. Until better randomized controlled trials with mycologic confirmation of a dermatophyte and reporting of clinical, mycologic, and complete cure (clinical and mycologic clearing) are available, it is difficult to recommend this treatment.

The pros of laser therapy, if it proves to be effective in the short- and long-term, are that it is solely a local therapy, and it avoids the potential side effects of oral antifungal agents, which for toenail onychomycosis often require three months of therapy and then up to one year to see clinical cure as the toenail grows out. Also, laser therapy avoids the potential for drug interactions, which can occur with oral antifungal therapy, especially in the elderly who are more likely to be on multiple drugs and have other comorbidities. As well, laser therapy may prove to be the treatment of choice in non-dermatophyte onychomycosis in which saprophytic fungi resistant to our traditional oral antifungal agents, such as terbinafine or itraconazole, are currently extremely difficult to clear.

The cons of laser therapy are that the true efficacy and relapse rates are currently unknown. The number of treatments required for complete cure needs to be determined, and, as it is likely that multiple treatments will be necessary, the cost of laser therapy is a major concern. Finally, there is the potential that, if not done properly with approved lasers and by physicians or podiatrists trained to use these lasers, laser therapy may result in pain and potential permanent tissue damage due to the excessive heating of the underlying nail bed in addition to the nail plate that harbours the fungal mycelia.

Answered by: Dr. Richard Haber
Optimal Screening Modality for Colorectal Cancer

Is virtual colonoscopy a good method to screen for colon cancer for those patients who are afraid of the real colonoscopy?

Submitted by: Feryal Sharabyani, MD, Laval, Québec

The optimal screening modality for colorectal cancer (CRC) depends on various factors, including the availability of tests and resources across provincial jurisdictions as well as patient factors, such as age, personal history, and family history. In a patient with average risk for developing CRC, the 2010 Canadian Association of Gastroenterology (CAG) guidelines recommend CRC screening starting at age 50 using fecal immunochemical testing (FIT), high sensitivity guaiac-based fecal occult blood testing (g-FOBT), or flexible sigmoidoscopy (FS). FS for colon cancer screening should be offered to all average-risk individuals.1 These recommendations are based upon randomized controlled trials that demonstrate a reduction in mortality with these screening modalities.

Although colonoscopy is not recommended for population-based colon cancer screening, it is considered an appropriate option (or alternatively, FIT, FOBT, or FS) for opportunistic colon cancer screening.

CT colonography (CTC, also referred to as virtual colonoscopy), is a minimally invasive technique that uses thin-slice CT images to reconstruct the colon and intra-abdominal contents in two- and three-dimensions. It has poor sensitivity for small polyps (less than 6 mm) and has a sensitivity of 70 to 86% and a specificity of 86 to 94% for polyps between 6 and 9 mm. For larger polyps (10 mm or larger), it has a test sensitivity of 85 to 93% and a specificity of 97%.1–3 This compares to an overall reported sensitivity for colonoscopy of greater than 95% for lesions 6 mm or greater. CTC still requires bowel preparation, and there remains a risk of bowel perforation or injury due to air instillation through the rectum as part of the procedure. Other disadvantages include radiation exposure and the inability to biopsy or excise suspicious lesions, which would necessitate an endoscopic procedure. With colonoscopy, however, conscious sedation is required, and there is an increased risk of bowel perforation and bleeding complications. Currently, the CAG does not recommend CTC for either population or opportunistic screening, although it could be considered in selected cases.

References

Answered by: Dr. Roger Y. Tsang
In the field of statistics, a standard score indicates how many standard deviations a data point is above or below the mean of the population. If the population parameters are known, a Z-score can be assessed against a Z-distribution, which defines the normal distribution. You are, therefore, able to use the Z-score to standardize your data point within a known, defined population. In osteoporosis screening, a Z-score is used to compare an individual’s results to others of the same age, weight, ethnicity, and gender.

A T-score is the number of standard deviations above or below the mean for a healthy, 30-year-old adult. In other words, a T-score compares a patient’s bone density to the optimal peak bone mass density (BMD) based on gender.

Given that bone density peaks in young adults, the World Health Organization defines a BMD T-score 2.5 standard deviations or more below the young-adult mean BMD as osteoporosis. It is, therefore, the T-score that is used to classify patients as being in the range of normal, osteopenic, or osteoporosis.

It should be mentioned, however, that although the T-score is important, it is recommended that physicians use a 10-year risk model to properly classify patients as being at low, moderate, or high risk for fracture (e.g., based on the Fracture Risk Assessment Tool or the Canadian Association of Radiologists and Osteoporosis Canada Risk Assessment Tool). This will have an impact on treatment decisions.

Answered by: **Dr. Michael Starr and Dr. Alexander Tsoukas**
Follow-up for Mild to Moderate Valvular Disease

What is the ideal follow-up for mild to moderate valvular disease?

Submitted by: Grant Davies, MD, Calmar, Alberta

It is reasonable to clinically assess and perform echocardiography on an annual basis in patients who have moderate valvular stenosis or regurgitation. Patients with mild valve disease do not require regular echocardiograms unless they develop signs of progression of valve disease (e.g., louder murmur, elevated jugular venous pressure, or exertional dyspnea).

The exception is the patient with a bicuspid aortic valve with evidence of associated aortopathy. These patients should have echocardiography performed on an annual basis, even if they have mild stenosis or regurgitation, to ensure that they have not developed significant dilatation of the ascending aorta (> 5 cm), which would require surgical repair.1

Reference

Answered by: Dr. Bibiana Cujec

Iron Deficiency Anemia and Celiac Disease

How does one treat iron deficiency in celiac disease? Is iron supplementation indicated, or does a gluten-free diet correct the deficiency?

Submitted by: Roshan Dheda, MD, Bradford, Ontario

Anemia in celiac disease can arise from multiple causes. It is a common manifestation of celiac disease that is due to impaired iron or folate absorption. In severe cases where the ileum is involved, anemia can also be caused by deficiency of vitamin B12 absorption. Bleeding and coagulopathy can occur with the impairment of vitamin K absorption. Anemia with thrombocytosis can also occur with hyposplenism.

To treat iron deficiency anemia due to celiac disease, a gluten-free diet alone is usually adequate to correct the anemia.

Resources

Answered by: Dr. Richmond Sy
The overall prevalence of adult epilepsy ranges from approximately 0.5 to 0.6% in the North American population. However, actual prevalence may be higher, as many cases remain undiagnosed or do not come to medical attention due to the stigma associated with this illness. Epilepsy affects more than two-million Americans and about 65-million individuals worldwide. About 15,000 individuals in Canada are diagnosed with epilepsy each year. Almost 40% of these individuals are diagnosed before the age of five and about 1.3% are diagnosed over the age of 60.

Many drugs are available to treat epilepsy, and the majority of epileptic seizures can be optimally controlled by anticonvulsant medications. Some of the medications commonly used to treat epilepsy include phenytoin, phenobarbitone, carbamazepine, valproic acid, topiramate, levetiracetam, primidone, vigabatrin, oxcarbazepine, ethosuximide, clonazepam, felbamate, lamotrigine, and gabapentin, among others. The type of medication used may depend upon several factors, including the frequency and severity of the seizures, the patient’s age and overall health, and the type of epilepsy.

Reference

Answered by: Dr. Abdul Qayyum Rana
Dr. Mohammed Abdullah Rana
Girls have their peak height velocity during early puberty (Tanner stages II to III). After the pubertal growth spurt, growth velocity diminishes toward zero as the epiphyses of the long bones fuse.¹ This occurs at an average age of 14 (up to 16 for those with delayed puberty), approximately two years after menarche, and is due to systemic estrogen exposure. Menarche occurs an average of 2.6 years after the onset of puberty, which is usually heralded by thelarche.² Therefore, after menarche, the use of estrogen-based contraceptives will not alter final adult height.

References

Answered by: Dr. Victoria Davis
Interpreting Anti-cyclic Citrullinated Peptide Antibodies

How do you interpret anti-cyclic citrullinated peptide antibodies?
Submitted by: V. Visconti, MD, Sherwood Park, Alberta

In rheumatoid arthritis (RA), certain peptides may become abnormally citrullinated, leading to an immunologic response and formation of anti-cyclic citrullinated peptide antibodies (anti-CCP). Early studies show that the presence of anti-CCP antibodies may lead to more progressive joint damage. In cohort studies that investigated second-generation anti-cyclic citrullinated peptide antibodies (anti-CCP2) in patients with early rheumatoid arthritis (< 2 years), summary sensitivity and specificity were 57% and 96% respectively for RA (based on meta-analysis). Given this high specificity, anti-CCP2 antibodies have become a good diagnostic marker, especially when they are present at a high titre. Low titres must be interpreted with caution in patients with infections (tuberculosis, hepatitis C) as well as with other rheumatological diseases, such as systemic lupus erythematosus, Sjögren’s syndrome, and psoriatic arthritis, which may rarely lead to false positives. Generally, it is thought that RA patients who have high titers of anti-CCP antibodies may be at higher risk for joint damage and should be considered for more aggressive therapy.

Reference

Answered by: Dr. Michael Starr and Dr. Alexander Tsoukas

Desiccated Thyroid Hormone

What is the role of desiccated thyroid hormone? What is its role in pregnancy?
Submitted by: Daniela Steyn, MD, Westlock, Alberta

There really is no role for desiccated thyroid in the management of hypothyroidism, since its preparation is not well standardized, so the bioavailability will fluctuate pill-to-pill, resulting in risks of under- and over-replacement. It is best to stick to the well-established and proven thyroid preparations of levothyroxine, such as Synthroid, Eltroxin, and Euthyrox.

Answered by: Dr. Ally Prebtani
Validity of Infrared and Thermography

Is infrared/thermography still being investigated as a screening tool for malignancy?

Submitted by: Grant Davies, MD, Calmar, Alberta

Thermography is a thermal imaging technique that uses an infrared camera to measure the heat intensity given off by the body. There is currently no scientific evidence to support the use of infrared/thermography in screening for malignancy, this is consistent with US FDA and Health Canada recommendations. Recently, there has been media coverage of the use of thermography in breast cancer, and Health Canada has reiterated that no thermography machines have been approved to screen for breast cancer in Canada.¹

Reference

Answered by: Dr. Roger Y. Tsang
Muscle fasciculations are typically seen in conditions involving degeneration of the anterior horn cells of the spinal cord, such as amyotrophic lateral sclerosis (ALS). However, they could also result from abnormal excitability of any part of the motor nerve. Fasciculations may present spontaneously or can be induced by tapping the muscle belly with a reflex hammer in these conditions. In lumbar disc herniation, fasciculations might result from mechanical stimuli exerted by herniated disc material on the exiting motor nerve root. However, they are very rare in most lumbar disc herniation syndromes, and patients are usually unaware of their presence. In general, fasciculations are a sign of weakness of the muscle, and, with progression of the underlying condition, the muscle may become so weak or atrophic that the fasciculations may eventually disappear.

Reference

Answered by: Dr. Abdul Qayyum Rana
15. Follow-up for an Enlarged Spleen

Ultrasound sometimes shows an enlarged spleen but no specific problems in history or CBC. What follow-up is needed?

Submitted by: Tariq Saeed, MD, Mississauga, Ontario

The average adult spleen weighs approximately 150 g and has a span of approximately 12 cm. An enlarged spleen (splenomegaly) can be due to a number of different causes, such as hematologic problems, liver disease, malignancy, and infections. A CBC and a white cell differential are important, as they may offer clues to an underlying problem; however, cytopenias may be present due to the splenomegaly. If a CBC is essentially normal, it helps to rule out underlying myeloproliferative disorders and hemolytic anemias.

Other causes of splenomegaly should be pursued. A baseline ultrasound of the liver and spleen is useful. This will help to accurately establish the size of the spleen and determine if there is any underlying liver pathology, such as cirrhosis. Baseline liver function tests should also be obtained. Underlying heart disease, such as congestive heart failure; infection history, including travel; and inflammatory diseases, such as systemic lupus erythematosus and rheumatoid arthritis, should be sought.

Answered by: Dr. Cyrus Hsia

16. Cytomel Replacement

Is replacing cytomel (T3) something that should be done routinely in hypothyroid patients?

Submitted by: Menuccia Gagliardi, MD, Sidney, British Columbia

There is no good evidence for this. Generally, only levothyroxine (T4) replacement is necessary. T3 replacement is only indicated in certain cases, including short-term use in patients preparing for thyroid cancer monitoring or treatment and in certain cases of severe, refractory depression.

Answered by: Dr. Ally Prebtani
17. Timing Statin Use

Why are statins taken at bedtime? Can they be taken any time during the day?

Submitted by: Anthony Lane, MD, Nanaimo, British Columbia

Statins inhibit cholesterol synthesis, and this occurs mainly at night, presumably because of a fasting state. It is, therefore, recommended that statins with a short half-life, such as simvastatin, should be taken in the evening. Small clinical studies have shown lower LDL concentrations when simvastatin is taken in the evening as opposed to the morning.¹

Atorvastatin and rosuvastatin have long half-lives of about 20 hours and, therefore, can be taken anytime during the day.

Reference

Answered by: Dr. Bibiana Cujec

18. Miscarriage and Pap Tests

A patient declined a Pap test during her routine antenatal screening. She was told it could lead to miscarriage. Is there evidence to support this?

Submitted by: Alope De, MD, Ottawa, Ontario

Routine antenatal screening does not include a Pap smear unless the patient has never had a Pap smear, has had less than two normal annual Pap smears, has had a previous abnormal Pap, or is due for her three year screen. In pregnancy the frequency of cervical screening does not change.¹ Pap smears during pregnancy may cause bleeding, due to cervical friability, but they are not associated with miscarriage.

Reference

Answered by: Dr. Victoria Davis
Serum CA 19-9 is not a reliable test for the screening of pancreatic cancer. Studies have reported a test sensitivity of 70 to 92% and a specificity of 68 to 92%.\(^1\)\(^-\)\(^5\) A number of etiologies are associated with an increased serum CA 19-9 level, giving rise to its low specificity. These include benign disorders, such as cholangitis and gallstones, as well as cirrhosis and other malignancies, such as hepatocellular carcinoma and biliary cancers. Using a cut point of > 37 U/ml, the positive predictive value is less than 1% for asymptomatic individuals and approximately 70% for symptomatic patients (i.e., jaundice, epigastric pain, weight loss).\(^6\)\(^-\)\(^8\) The recommendation against using CA 19-9 as a screening test for pancreatic cancer is consistent with the American Society of Clinical Oncology guidelines.\(^9\)

References

Answered by: Dr. Roger Y. Tsang
Examining Dysplastic Moles for Melanoma

How often should a patient with dysplastic moles and a family history of melanoma have her skin checked by a doctor?

Submitted by: Z. Gabor, MD, Scarborough, Ontario

This is a difficult question to answer in terms of evidence-based medicine. One of the major problems is lack of consensus on the definition of a dysplastic nevus and dysplastic nevus syndrome. At a 1992 National Institutes of Health (NIH) conference, it was recommended that the term dysplastic nevus be abandoned and replaced by the term atypical nevus. A diagnosis of dysplastic nevus syndrome (also known as familial atypical multiple mole melanoma syndrome (FAMMM syndrome)) is defined as:

- Occurrence of melanoma in > 1 first- or second-degree relative
- A large number of nevi (often > 50), some of which are clinically atypical
- Nevi with certain distinct histologic features

It is important to be aware that the presence of multiple atypical nevi appears to be a risk factor for development of melanoma but that most individual atypical nevi are, in fact, benign and do not progress to melanoma. Individuals with atypical nevi have a 3 to 20 fold elevated risk of developing melanoma compared to the general population. In patients who fit the criteria for dysplastic nevus syndrome, the estimated cumulative relative risk for melanoma ranges from 127 to 444 at five years.

The NIH conference in 1992 did not lead to a consensus on management of patients with multiple dysplastic nevi or FAMMM. In a 2002 survey of fellows of the American Academy of Dermatology, 99% of dermatologists recommended patients perform skin self-examination, 75% performed total body skin examinations on follow-up visits, 49% obtained baseline total body skin photographs, and 23% routinely used dermoscopy when examining their patients’ nevi. In terms of follow-up visits for patients with dysplastic nevi, 58% recommended examinations every 12 months, and 33% recommended examinations every six months.

Based on this survey and discussions with dermatology colleagues, I would also recommend that all patients with multiple atypical nevi, and especially those with dysplastic nevus syndrome or FAMMM:

- Do monthly skin self-examinations in accordance with the ABCDEs of melanoma
- Have baseline total body photography done, which should be repeated yearly (hopefully in the near future this will be replaced by computer-based mole mapping)
- Practice sun avoidance and use at least an SPF 30 sunscreen with an effective UVA-blocker
- Have follow-up visits with dermatologists who perform total body skin examinations, including dermoscopy of suspicious nevi at 6 to 12 month intervals.

Answered by: Dr. Richard Haber
Can topical (vulvar) or intravaginal estrogen compounds be safely used in patients with a past history of breast cancer?

Submitted by: Maureen McCall, MD, Red Deer, Alberta

In patients with hormone-receptor-positive breast cancer, the safety of topical or intravaginal estrogen compounds is unclear, and they should be approached with caution. Studies evaluating the use of 17β-estradiol products, in postmenopausal women have reported increased serum estradiol and estrone levels secondary to vaginal absorption.1–3 Therefore, there is a theoretical risk that this could, in turn, increase breast cancer recurrence. In patients with symptoms of atrophic vaginitis, the use of nonhormone-based vaginal lubricants and moisturizers is preferable.4 In severe refractory cases, vaginal estrogens at the lowest effective dose can be considered, but only after an informed discussion with the patient regarding the possible risks and benefits.5 For example, the use of a 17β-estradiol vaginal tablet at a lower dose formulation (10 μg) appears to have less systemic absorption compared to the 25 μg formulation.6

References


Answered by: Dr. Roger Y. Tsang
What is the recommended investigation and prescribing algorithm for a multiparous premenopausal female with recurrent urinary tract infections?

Submitted by: Nafisa Aptekar, MD, Brampton, Ontario

Unless the infections are associated with gross hematuria, severe flank pain, or fever, generally, no investigations are needed. If infections are recurrently symptomatic and are documented by positive cultures, then a course of antibiotic prophylaxis with a three-month course of nightly nitrofurantoin is recommended. Remember, asymptomatic bacteriuria should not be treated.

Answered by: Dr. Michael Greenspan
23. Following a Patient with Lupus

How should a patient with long-standing lupus be followed by a family physician after being discharged from specialist care (i.e., screening tests, etc.)?

Submitted by: John Simpson, MD, Uxbridge, Ontario

Systemic lupus erythematosus (SLE) has a variable clinical presentation, ranging from mild skin or joint involvement to life-threatening renal, hematological, or CNS disease. Following appropriate treatment, patients may enter a stage of clinical remission where they have very mild or no disease activity at all. In a primary care setting, follow-up mainly focuses on interval bloodwork looking at inflammatory markers and changes in serologies. These include:

- CBC
- Creatinine
- Urinalysis with microscopy
- Spot protein-to-creatinine ratio
- C-reactive protein
- Erythrocyte sedimentation rate
- Complement
- Albumin
- Anti-dsDNA levels

The frequency of ordering bloodwork depends on the disease severity and whether there was previous internal organ involvement, such as kidney disease. If a patient has had previous nephritis and now has a decreased glomerular filtration rate, monitoring should be conducted every two to three months. If the patient has fully resolved nephritis with normal renal function, four to six months would be reasonable. If he or she has a milder presentation with mainly skin and joint disease but no major systemic features, then testing every 6 to 12 months would be adequate. During follow-up, physicians should have a high degree of suspicion of SLE relapse with even mild or vague changes in symptoms. It is also important to stress environmental factors, such as smoking cessation, appropriate and regular use of UVA/UVB sunscreen (SPF 55 and higher), regular exercise, routine immunizations, and pregnancy counselling.

Answered by: Dr. Michael Starr and Dr. Alexander Tsoukas
Follow-up for Surgically-acquired Short Bowel Syndrome

What is the proper follow-up for an adult patient with surgically-acquired short bowel syndrome?

Submitted by: Annie Leclerc-Soubrier, MD, Québec City, Québec

Short bowel syndrome (SBS) results from the partial or complete surgical removal of the small bowel with resultant insufficient absorptive capacity, which leads to diarrhea, electrolyte abnormalities, and malnutrition. Resection of less than 50% of the small intestine is generally well tolerated.

It is estimated that there are 10,000 to 15,000 adults in the USA with short bowel syndrome. The most common etiologies of SBS are acute mesenteric ischemia, malignancy, and Crohn’s disease.

The treatment goal in these patients is to control the underlying disease, correct dehydration and electrolyte abnormalities, and prevent, or correct, malnutrition. The most important therapy is total parenteral nutrition (TPN).

To prevent malnutrition, most patients with SBS will need, and be dependent on, home TPN. Lifelong TPN dependence is likely to persist if there is less than 60 cm of residual small intestine.

Medication may play a supporting role in management. PPIs reduce gastric acid secretion. Antimotility agents, such as loperamide hydrochloride or diphenoxylate, delay small intestinal transit. Octreotide, administered parenterally, reduces the volume of G I secretions. It is very expensive if it is not covered by insurance.

Patients who remain dependent on TPN face substantial TPN-associated morbidities, including catheter sepsis, venous thrombosis, liver and kidney failure, and osteoporosis.

Supplemental enteral nutrition may be helpful along with TPN. Teduglutide, an analogue of GLP-2, is a protein involved with intestinal growth and function. It is targeted therapy for SBS and provides either an alternative to intravenous parenteral nutrition or at least a reduction in the volume of TPN required. It is a once a day injection. The first of its kind, it was approved in the USA very recently. To date, it is not available in Canada.

Each instance of SBS should be approached as an individual, complex problem. Management and follow-up should be in the hands of experts, especially those with home TPN skills.

Answered by: Dr. Robert Bailey and Dr. Amir Tahiri
Managing Persistent Hematuria

What is the best approach to managing persistent hematuria?

Submitted by: Simon Chiu, MD,
Scarborough, Ontario

There are two types of hematuria that need to be considered. Gross hematuria must always be fully investigated. Microscopic hematuria needs to be investigated only if a significant number of red blood cells are seen. A urine dip is only a screening test. Microscopy must be requested to determine the need for testing. Greater than two red blood cells per high power field on two successive urinalyses, in the absence of recent sexual intercourse, menses, and extreme physical activity, should warrant testing. This includes upper tract ultrasound, cytology, and cystoscopy. The presence of proteinuria and red cell casts requires a nephrology referral.

If the initial testing is negative, repeat cytology and urinalysis should theoretically be done at 3, 6, 12, 18, and 24 months post original presentation. If all is clear at this point, no further follow-up is needed. If the microscopic hematuria becomes associated with symptoms, repeat cystoscopy is then considered.

Answered by: Dr. Michael Greenspan
Acyclovir for Pityriasis Rosea

Is taking oral acyclovir helpful in shortening pityriasis rosea rash duration?

Submitted by: Peter T. Chee, MD, New Glasgow, Nova Scotia

Pityriasis rosea (PR) is a common papulosquamous eruption that has, in some studies, been shown to be associated with the reactivation of human herpesvirus 7 (HHV-7) and less consistently with human herpesvirus 6 (HHV-6). This is the rationale for treating this self-limited skin disease with oral acyclovir, an antiviral drug that has been shown to be helpful in treating herpes infections. However, acyclovir appears to have lower activity in treating HHV-6 and HHV-7 than in treating herpes simplex or the varicella zoster virus.

The evidence for treating PR with oral acyclovir is weak. In 2006, a nonrandomized and nondoubled-blinded study of 87 patients with PR, treated with either oral acyclovir 800 mg five times daily or placebo, showed 79% of treated patients fully regressed by day 14, compared to 4% in the placebo group. The authors felt that the efficacy of oral acyclovir was likely higher during the first week of onset of PR when the virus was more actively replicating. A second study in 2011 was a randomized, investigator-blinded, prospective, four-week study of 64 patients with PR randomly assigned to acyclovir 400 mg five times daily for one week or no treatment with follow-up. Acyclovir was more effective than follow-up in erythema reduction at the end of weeks one, two, three, and four, but there was no statistical difference between the two groups in terms of scaling at week four.

A 2012 study compared oral acyclovir 800 mg five times daily for seven days in adults or 20 mg/kg/day in five divided doses for seven days in children versus oral erythromycin (another oral drug that has been reported to be helpful in pityriasis rosea) with the oral erythromycin given as 500 mg q.i.d. for seven days in adults and 40 mg/kg per day in four divided doses for seven days in children. This was an open randomized trial. After eight weeks, all patients showed complete response in both groups. The response to oral acyclovir was statistically significantly better at one, two, four, and six weeks.

There is one case report of PR occurring in a patient on acyclovir 400 mg twice daily as suppressive therapy for genital herpes.

At the present time, there is just the one randomized, blinded study (discussed above) showing efficacy of acyclovir in PR. As pityriasis rosea is a benign, self-limited disease, I would normally just reassure patients and not treat them unless the PR was pruritic, in which case a mild topical steroid, such as 1% hydrocortisone acetate with or without a sedating antihistamine, such as hydroxyzine can be prescribed for symptomatic relief.

However, in very widespread cases of PR, or very symptomatic cases, oral acyclovir or oral erythromycin could be considered, as these drugs have relatively few side effects.

Larger randomized, controlled, and double-blinded studies are necessary to ultimately establish the efficacy of oral acyclovir in treating PR.

References

Answered by: Dr. Richard Haber
Follow-up for a Benign Tubular Adenoma

After a benign tubular adenoma is found and removed by colonoscope, when should the next colonoscopy be performed, and should fecal occult blood tests be done yearly until that time? Is any other testing required?

Submitted by: Paul Stephan, MD, Scarborough, Ontario

After removal of a benign tubular adenoma, the next colonoscopy should be performed in five years, provided that the size of the polyp is not greater than 10 mm. If the tubular adenoma is > 10 mm, the recommendation is to repeat the colonoscopy in three years.

Repeat fecal occult blood testing (FOBT) is not recommended between the colonoscopic examinations if the baseline colonoscopy is adequate, but there are very few studies that look into the role of interval FOBT.

Resource

Answered by: Dr. Richmond Sy
It is well known that HBV is strongly associated with hepatocellular carcinoma (HCC). Patients with HCC have a shortened lifespan with a median survival time, from date of diagnosis, of less than two years. The objective of screening and surveillance for HCC is to identify it early and, thus, reduce mortality in those patients who develop this malignancy. Measurement of serum α-fetoprotein (AFP) and abdominal ultrasound examination are used for early detection. Ultrasound is the more reliable method. Surveillance ultrasound detects the majority of tumours before they present clinically, with a sensitivity of 94%. Identification of HCC at an early stage is better with ultrasound testing every six months. AFP levels can be misleading, as they can fall within a normal range even with advanced HCC.

The American Association for the Study of Liver Diseases (AASLD) guidelines suggest that surveillance for HCC is recommended for many HBV carriers and for all patients with cirrhosis. For those patients without cirrhosis, the AASLD categorizes four main groups in which the surveillance for HCC is cost-effective, as the annual incidence of HCC exceeds 0.2%. These groups include:

- African men over the age of 40
- African women over the age of 50
- Patients with a family history of HCC

The AASLD guidelines recognize that Caucasian patients with no or low HBV activity and no cirrhosis are at low-risk for HCC (< 0.2% annually). Accordingly, the recommendation for surveillance for men with Hepatitis B that are younger than 40 years or women younger than 50 years is uncertain.

There are several observational and uncontrolled studies that have shown improved survival with HCC surveillance, but no tightly controlled randomized study has ever been done, and it is unlikely that there will ever be one for obvious reasons: who would take part? Having said that, there is a general consensus within the gastrointestinal and hepatology community that screening for HCC in HBV carriers is necessary.

References

Answered by: Dr. Robert Bailey and Dr. Ahmed Alamar
Nonvalvular atrial fibrillation implies that there is no valvular disease causing the atrial fibrillation. Valvular causes of atrial fibrillation include rheumatic mitral valve disease, degenerative mitral or aortic disease, congenital bicuspid aortic valve disease, and functional mitral or tricuspid regurgitation, secondary to ventricular remodelling. Prosthetic valve replacement and valve repair are also causes of valvular atrial fibrillation.

On physical examination, there is likely to be a murmur if the cause of atrial fibrillation is valvular. However, the murmur of mitral stenosis is a diastolic murmur of low frequency that is localized to the apex and is easy to miss. An echocardiogram is indicated in all patients with atrial fibrillation. This test will determine whether there is at least moderate dysfunction of a valve, which can be the cause of valvular atrial fibrillation.

The distinction between valvular and nonvalvular atrial fibrillation is important. Patients with rheumatic or prosthetic valvular atrial fibrillation require anticoagulation with warfarin. The CHADS2 score is used in patients with nonvalvular atrial fibrillation to determine whether anticoagulation is required and the newer anticoagulants, such as dabigatran, rivaroxaban and apixaban, are effective at preventing thromboembolic events in these patients.

Answered by: Dr. Bibiana Cujec
30. Early Symptoms of Blood Clots

What are the early symptoms of a blood clot in the lower leg?

Submitted by: W. Abouelnasr, MD, Toronto, Ontario

A blood clot, or thrombotic event, can occur in the venous system (venous thromboembolic event) or arterial system (arterial thromboembolic event). Venous thromboembolic events include superficial thrombophlebitis, deep venous thrombosis (DVT), and pulmonary embolism (PE). A DVT of the lower extremities can be defined as proximal, if it occurs at or above the trifurcation of the popliteal vein, or distal, if it occurs below that. A DVT of the proximal or distal lower extremity may be associated with the sudden onset of symptoms of pain, redness, swelling, warmth, or impaired range of motion. More localized symptoms, such as a palpable subcutaneous cord-like firmness, may be more in keeping with a superficial thrombophlebitis.

It is important to remember that there may be an associated PE, and it is important to assess for symptoms, such as the sudden onset of shortness of breath, pleuritic chest pain, nonproductive cough, and hemoptysis.

Answered by: Dr. Cyrus Hsia