1. **Monofilament Testing for Peripheral Neuropathy**

**How accurate is monofilament testing for checking peripheral neuropathy?**

Submitted by: M. Mukty, MD, Winnipeg, Manitoba

In the clinical setting, 10 g monofilament testing of the foot is a sensitive, specific, simple, and inexpensive screening tool for diabetic peripheral neuropathy. In addition, an abnormal monofilament exam correlates with an increased risk of developing plantar foot ulceration and lower extremity amputation in the future.

Answered by: Dr. Ally Prebtani

2. **Blastocystis hominis in Stool Samples**

**What is the significance of *Blastocystis hominis* in stool samples? What is the best treatment in symptomatic patients?**

Submitted by: N. Merali, MD, Victoria, British Columbia

The *Blastocystis hominis* species is an anaerobic protozoan parasite found in the human gastrointestinal tract. There is controversy as to whether they represent a commensal organism or a true pathogen.

*B. hominis* can be found in 8 to 15% of stool samples. There are a large number of asymptomatic individuals with positive stool samples, which suggests the existence of a carrier state. Also, it has been observed that *B. hominis* is often associated with other potential pathogens.

Treatment is not necessary in asymptomatic individuals. Symptomatic patients should have investigations to make sure that no other pathogens are found and that noninfectious etiologies are ruled out. Treatment is reasonable in symptomatic patients if these are excluded. Metronidazole (500 to 750 mg t.i.d. for 5 to 10 days) is the preferred therapy. Trimethoprim/sulfamethoxazole for seven days is an acceptable alternative.

Reference


Answered by: Dr. Richmond Sy
Initial management of lactation issues should focus upon determining and addressing the cause of inadequate milk supply or transfer. A thorough breastfeeding history may identify contributing maternal and/or neonatal factors. These include previous maternal breast surgeries, oral candidal infection of the infant, and the mother’s use of drugs that reduce milk production. Direct observation of breastfeeding may reveal either maternal or neonatal anatomical difficulties or improper breastfeeding technique. The primary intervention depends upon the cause, but it most often involves increasing the effectiveness and frequency of breastfeeding.1 Use of breast pumps or manual hand expression, especially after a feeding, increases stimulation and emptying of the breast, thereby enhancing milk production.

Galactagogues are medications believed to assist the initiation, maintenance, or augmentation of maternal milk production. The most commonly used prescription agents are dopamine receptor antagonists (e.g., metoclopramide and domperidone). However, there is no data demonstrating that these agents are more effective than interventions focused upon increasing the frequency of breastfeeding and improving breastfeeding technique.2 In addition, the long-term effects of these medications are unknown, and they may be transferred through breast milk to the infant.3 Galactagogues should never be used to replace an evaluation or to correct of any modifiable factors, such as frequency and thoroughness of breast emptying.4 Domperidone does not have an indication for use as a galactagogue in Canada or the USA and is used “off-label” for this purpose.

In March 2012, Health Canada issued a bulletin citing recent epidemiologic studies showing that the use of domperidone may be associated with serious ventricular arrhythmias and sudden cardiac death (cardiac arrest). The risk of cardiac adverse effects was highest in patients taking > 30 mg of domperidone daily (adjusted OR 11.4; 95% CI: 1.99 to 65.2) and in those patients over the age of 60 years (adjusted OR: 1.64; 95% CI: 1.31 to 2.05). Patients should stop taking domperidone and seek medical attention immediately if they experience dizziness, palpitations, seizures, or other signs or symptoms of an abnormal heart rhythm.

No absolute contraindication for the use of domperidone exists at this time. However, domperidone should be used with extreme caution; mothers need to be aware of potential side effects, the lack of data supporting their use, and that the product is being prescribed “off-label.”

References

Answered by: Dr. Victoria Davis
Managing Autoimmune Progesterone Dermatitis

What is the best treatment for autoimmune progesterone dermatitis?
Submitted by: Jason Lee, MD, Toronto, Ontario

Autoimmune progesterone dermatitis (APD) is a rare condition. It is likely due to a hypersensitivity reaction to endogenous or exogenous progesterone. The diagnosis should be suspected when there is a cyclical, recurring, cutaneous, eruption occurring premenstrually during the luteal phase that corresponds to a post ovulation rise in progesterone. The eruption usually ends at the onset of menstruation. APD often clears during pregnancy. The diagnosis is normally confirmed by either oral or intradermal challenges, with progesterone reproducing the cutaneous eruption.

Skin lesions of APD can be extremely variable, with reports of urticaria, angioedema, erythema multiforme, eczema, folliculitis, fixed drug eruption, purpura, and even anaphylaxis.

It is difficult to say what the “best” treatment for APD is, as it is rare, and there are no randomized placebo controlled trials involving this condition. However, therapy is aimed at inhibiting endogenous progesterone production by suppressing ovulation. This can be done by administering conjugated estrogens or ethinyl estradiol-containing oral contraceptives (especially ones with low progesterone content). There are also reports of response to tamoxifen, danazol, and the gonadotrophin-releasing hormone analog, buserelin nasal spray.

A recent report also described successful treatment with progesterone desensitization.1

Reference

Answered by: Dr. Richard Haber

However, therapy is aimed at inhibiting endogenous progesterone production by suppressing ovulation. This can be done by administering conjugated estrogens or ethinyl estradiol-containing oral contraceptives (especially ones with low progesterone content).
5. Elevated Alk Phosphate

How do you manage a patient with multiple bone pains and elevated alk phosphate that is otherwise healthy?

Submitted by: Denis Cheung, MD, Ottawa, Ontario

An elevated alkaline phosphatase of non-hepatic origin is indicative of active bone formation, as it is a by-product of osteoblast function. The pattern of multiple bony pains in association with an elevated alkaline phosphatase is a red flag for osseous metastatic lesions; however, other less common pathologies should be considered, namely Paget’s disease, osteomalacia, and occult bone fractures. All these processes alter bone turnover locally and can lead to painful microfractures throughout the skeleton. The best initial test would be a bone scan, which would detect any active osteoblastic activity whether it be from neoplastic bone lesion, fracture, or other benign causes. Any areas of increased tracer uptake should be further investigated with plain film radiography or CT scan looking for pathological bone lesions. If there is suspicion of neoplasm or metabolic bone disease, age- and gender-appropriate cancer screening and a calcium, phosphorus, and vitamin D level should be obtained.

Answered by: Dr. Michael Starr  
Dr. Alexander Tsoukas
Herpes simplex virus (HSV) infections may be due to HSV type 1 (HSV-1) or 2 (HSV-2). Although HSV-1 infections classically cause oral infections, and HSV-2 is linked to genital infections, the rates of genital HSV-1 infections have increased; this has been attributed to rising oral sex practices. Clinically, it is impossible to distinguish HSV-1 from HSV-2 infections, though HSV-1 infections are often less severe and recur less frequently.

Several direct tests, performed on specimens from herpetic lesions, are used to diagnose and distinguish HSV types. Traditionally, the gold standard has been HSV culture, which is highly specific but has variable sensitivity. Typing is performed by exposing positive cultures to labelled type-specific antisera. Antigen detection by direct fluorescent antibody can rapidly detect and distinguish HSV-1 from HSV-2 and has a sensitivity of up to 90%. HSV DNA detection by polymerase chain reaction (PCR) is four times more sensitive than culture and is up to 100% specific, making it the test of choice. If target-specific primers/probes are used, PCR can distinguish HSV-1 from HSV-2. Local laboratories should be consulted to determine the type and availability of direct tests for HSV.

Indirect serological tests are available that can distinguish HSV-1 from HSV-2 antibodies. Western blot is type-specific but is expensive and time consuming. Immunoglobulin-based tests, including ELISA and EIA-3 are available in some Canadian laboratories for specific indications. Type specific serology for HSV is not routinely used for diagnosis, because the high seroprevalence of HSV-1 (55 to 89%) and HSV-2 (9.1 to 19%) complicates test interpretation, and serology can not distinguish oral from genital infection.

References
What are the guidelines for the use of PPIs in patients with Barrett’s Esophagus?

Submitted by: P. Mucalov, MD, Queensville, Ontario

Regarding the pathophysiology of Barrett’s esophagus, it is believed that the acid exposure from gastroesophageal reflux may damage DNA and induce proproliferative and antiapoptotic effects. Considering this, gastric acid inhibition should be beneficial. However, there have been no prospective trials completed that have shown that the administration of proton-pump inhibitors (PPIs) is able to prevent the development of dysplasia and progression in Barrett’s. The strength of evidence that PPIs have a favourable effect on patients with Barrett’s esophagus is limited to observational studies. These have found inverse correlations between long-term proton-pump inhibitor use and incidence of dysplasia and adenocarcinoma. Due to the limited nature of evidence at this time, the use of proton-pump inhibitors, specifically as chemoprevention in Barrett’s esophagus, is not indicated. Proton-pump inhibitors should, however, continue to be used to treat patients with active gastro-esophageal reflux disease with or without Barrett’s esophagus. This is in accordance with the most recent American Gastroenterologist Association guidelines. However, the presence of esophagitis often makes interpretation of Barrett’s esophagus difficult regarding dysplasia, and biopsies should be taken while patients are on proton-pump inhibitors.

Answered by: Dr. Robert Bailey
Silent Ischemia

Silent ischemia concerns us all — it can be life threatening; what is the easiest, most efficient way to verify its existence and severity?

Submitted by: Brian Blicher, MD, Hampstead, Québec

Silent ischemia is common in patients with known coronary artery disease (CAD) and is predictive of prognosis. Silent myocardial ischemia also occurs in patients who have asymptomatic CAD (i.e., do not have any angina or prior history of myocardial infarction). The first manifestation of CAD in these patients may be sudden cardiac death or myocardial infarction.

The easiest and most efficient way to diagnose silent myocardial ischemia is with a treadmill stress test. Patients who develop silent myocardial ischemia during the first stage of exercise are at high-risk for cardiac events. Coronary calcium score and coronary CT angiography are useful to screen for coronary artery disease but do not provide a functional assessment of ischemia. For example, a person might have severe triple vessel coronary artery disease but not have any ischemia if there is excellent collateral blood supply.

Screening for myocardial ischemia in asymptomatic patients has a relatively low predictive value for cardiac events and various professional societies advocate different approaches depending on occupation, risk factors, and level of athletic performance. Screening for silent myocardial ischemia in an asymptomatic adult could be considered for those who have jobs linked to public safety (e.g., pilots, firefighters, police officers), those who have high levels of physical activity (male athletes > 40 years, female athletes > 50 years), and those with multiple vascular risk factors, especially if starting a more intensive exercise program. People at low risk for CAD based on their risk factor profile (Framingham risk < 10% at 10 years) should not be screened for silent myocardial ischemia.

Therapies that improve outcomes in patients with silent ischemia include β-blockers, statins, and revascularization.

Answered by: Dr. Bibiana Cujec
Treatment Modalities for Hirsutism

Hirsutism with normal hormone levels — what are the latest treatment modalities that are accessible and covered?

Submitted by: I. D’Souza, MD, Toronto, Ontario

It is difficult to comment on what is “covered,” as coverage of medical treatments would depend on individual drug insurance. In general, permanent epilation methods would not be covered by medical insurance.

Treatment of hirsutism in females can be divided into medical (pharmacologic) and physical methods of hair removal.

Medical treatments may be helpful even in the presence of normal hormone levels. These include estrogen-progestrone oral contraceptives and oral contraceptives containing estrogen and progesterone-like antiandrogens, such as cyproterone acetate and drospirenone. As well, oral antiandrogens, such as spironolactone, flutamide, and cyproterone acetate, may be helpful. Also 5α-reductase inhibition using finasteride may be useful.

Efornithine hydrochloride 13.9% cream is an ornithine decarboxylase inhibitor and may be useful to inhibit hair growth.

Physical methods of hair removal include temporary and permanent methods of epilation. Temporary methods include shaving, plucking or tweezing, threading, and waxing. Chemical depilatories (usually containing thioglycolates) are also useful for temporary hair removal.

Permanent hair removal is the most effective way to remove unwanted hair long-term as can be seen with hirsutism. This includes electrolysis and laser hair removal.

Answered by: Dr. Richard Haber
Screening for Cerebral Aneurysm

What are the indications for screening of cerebral aneurysm?

Submitted by: J. Shasswan, MD, Montréal, Québec

The overall prevalence of intracranial aneurysms ranges from approximately 0.5 to 6.0%. About 2% of the adult population may have an asymptomatic cerebral aneurysm, and one-fourth of these patients may have multiple aneurysms. Aneurysmal subarachnoid hemorrhage (SAH) occurs at an estimated rate of 6 to 16 per 100,000 population, and, thus, most aneurysms do not rupture. Approximately 10% of patients with SAH die prior to reaching the hospital.

The probability of rupture is directly proportional to the size of the aneurysm. Smaller aneurysms, which are less than 6 mm in diameter, have low-risk for rupture, and patients with rupture of mid-sized aneurysms of less than 10 mm have a better prognosis than those with rupture of larger aneurysms. Aneurysmal surgery is associated with significant morbidity and mortality.

In spite of the serious consequences of the rupture of cerebral aneurysms, screening of asymptomatic individuals, patients without risk factors, or patients with acquired risk factors, such as smoking or alcohol abuse, does not appear to provide much benefit.

Screening of patients with a family history of ruptured cerebral aneurysm is controversial. The Stroke Council of the American Heart Association does not recommend screening for aneurysms in patients who have only one first-degree relative with aneurysmal rupture.

Although several studies have suggested screening patients who have two or more family members with cerebral aneurysms, one of the analyses indicated that screening in these patients may not significantly reduce morbidity or mortality. Therefore, the decision on whether or not to screen for cerebral aneurysms in patients who have two or more first-degree relatives with SAH should be made on a case-by-case basis.

Screening should be considered in patients with rare conditions that are associated with an increased risk of aneurysms, such as, autosomal dominant polycystic kidney disease; however, the decision to screen these patients should also be based on their overall health.

In patients with a history of prior aneurysmal subarachnoid hemorrhage, the annual rate of new aneurysm formation is 1 to 2%, and the risk of aneurysmal rupture may be increased. Thus, screening of these patients may be recommended.

References

Answered by: Dr. Abdul Qayyum Rana
Migraine and Inflammatory Disease

Is it true that migraine is now thought to be an inflammatory disease? Is this why NSAIDs help?

Submitted by: Dominic Eustace, MD, Delta, British Columbia

Inflammation is a localized response to protect the tissues against injury. The inflammatory response consists of production and release of chemical substances by cells in the affected tissue, resulting in pain, erythema, and swelling. Histologically, inflammation is characterized by dilatation and increased permeability of blood vessels causing an increase in blood flow; exudation of fluids, including plasma proteins; and leukocyte migration into the inflammatory area. Migraine has not classically been considered an inflammatory disease; instead, a vascular etiology has been proposed. However, many reports have suggested no differences in blood flow velocity in different arteries during and outside migraine attacks.

Some of the recent reports have provided evidence that the mechanism of migraine may be related to inflammation within cephalic vasculature. Mast cells have an important role, not only in the allergic reactions, but also in the inflammatory diseases. Mast cells are located in the perivascular area and can be activated following stimulation of the trigeminal nerve, as well as the cervical or sphenopalatine ganglion. Neuropeptides and substance P can activate mast cells, leading to secretion of vasoactive, proinflammatory, and neurosensitizing mediators precipitating migraine attacks. Mast cells can also secrete proinflammatory and vasodilatory markers that can exacerbate migraine. However, more research is needed to determine the finite roles of these processes in migraine.

Reference

Answered by: Dr. Abdul Qayyum Rana
What is the difference between Eltroxin and Synthroid?

Submitted by: David Hawkins, MD, Kelowna, British Columbia

Eltroxin and Synthroid are formulations of levothyroxine made by two different pharmaceutical companies. The active ingredient is the same in both; however, there may be a difference in the non-medical component (e.g., binder, filler, etc.). This may lead to varying bioavailability. Some studies frame this as an important difference, while others do not. It is likely best to use the same brand when refilling prescriptions, especially if the thyroid hormone levels are fluctuating in those being replaced with levothyroxine, and if there is no other reason to change brands.

Answered by: Dr. Ally Prebtani
13. PCR vs. Culture for Diagnosing Gonococcal Infection

Is gonococcal infection, diagnosed by PCR, as reliable as a culture diagnosis?

Submitted by: John Mazurka, MD, Hamilton, Ontario

Polymerase chain reaction (PCR) is one of a number of nucleic acid amplification tests (NAAT). The sensitivity and specificity of the most recently approved commercial NAATs are the highest of any testing approaches for the diagnosis of gonococcal infections, and their use can increase the number of cases diagnosed. Because the organisms are fastidious, culture is unreliable. Optimal specimen types for NAATs are first catch urine (FCU) from men and vaginal swabs (VS) from women. VS are as accurate as cervical swabs. Female FCU, while acceptable, may have reduced performance when compared to genital swabs. NAATs are also recommended for the detection of rectal and oropharyngeal infections, but there are presently no licensed tests in Canada for these specimen types; individual laboratories in Canada may offer a NAAT after in-house laboratory evaluations, including confirming of positives with culture or a second NAAT.

Currently, gonorrhea culture is the only method that can be used to monitor developing resistance to treatment regimens. In light of rising resistance in Neisseria gonorrhoeae to multiple antibiotics, the Canadian Guidelines on Sexually Transmitted Infections recommend culture for gonorrhea in symptomatic men who have sex with men. However, due to increased sensitivity of NAAT over culture, both gonococcal culture and NAAT may be indicated. Test of cure with culture is recommended for pharyngeal infections, those with persistent symptoms after treatment, cases treated with a regimen other than a preferred regimen, and cases linked to drug resistance or treatment failure that were treated with that same antibiotic.

References

Answered by: Dr. Amoeta Singh
Dr. Max Chernesky
Male Osteoporosis and Denosumab

Denosumab is indicated for men with prostate and androgen deprivations. What about men who have osteoporosis only?

Submitted by: Sylvia Athaide, MD, North York, Ontario

Current guidelines do not recommend denosumab for use in male osteoporosis without androgen deprivation or metastatic disease. This is due to a lack of clinical data in males. However, a very recent randomized controlled trial showed denosumab to be effective in treating male osteoporosis. Males who received denosumab every six months had an increase in bone mineral density at the lumbar spine of 5.7%, total hip 2.4%, and femoral neck 2.1% after only two doses. This was independent of androgen levels, and comparable to best current therapies.1

Reference

Answered by: Dr. Michael Starr
Dr. Alexander Tsoukas
Asymptomatic bacteriuria is the presence of a positive urine culture in an asymptomatic person. This occurs in up to 7% of pregnancies, particularly in multiparous women. Bacteriuria has a greater propensity to progress to pyelonephritis in pregnant women due to smooth muscle relaxation and ureteral dilatation, which may facilitate ascent of bacteria. Bacteriuria is associated with an increased risk of preterm birth, low birth weight, and perinatal mortality. Treatment of bacteriuria in pregnancy reduces incidences of these complications and lowers the long-term risk of sequelae following asymptomatic bacteriuria.\(^1\) Screening for asymptomatic bacteriuria should be performed between 12 and 16 weeks gestation or at the first prenatal visit if this occurs later. I tend to repeat this around 28 weeks gestation when the patient has a glucose screen. The Infectious Disease Society of America guidelines recommend treatment.\(^2\) Short course antibiotic therapy is usually effective. Empiric treatment regimens, pending urine culture and sensitivity testing, include nitrofurantoin 100 mg p.o. every 12 hours for five days; cefpodoxime 100 mg p.o. every 12 hours for three days; amoxicillin clavulanate 500 mg p.o. every 12 hours for three to seven days; and fosfomycin 3 g p.o. as a single dose.

References

Answered by: Dr. Victoria Davis
Chlamydia PCR after Treatment

How long does it take for Chlamydia PCR to become negative after treatment?

Submitted by: Avram Whiteman, MD, Westmount, Québec

There are a number of highly sensitive and specific nucleic acid amplification tests (NAAT), including polymerase chain reaction (PCR), used for screening and diagnosis of Chlamydia trachomatis infections. NAATs target either C. trachomatis plasmid DNA (PCR and strand displacement amplification [SDA] assays) or ribosomal RNA (rRNA) (transcription mediated amplification [TMA] assays). While culture is typically negative shortly after treatment, NAATs may remain positive, as DNA and rRNA can persist in sites of infection where viable organisms do not. The kinetics of C. trachomatis DNA and rRNA clearance are not well studied.

C. trachomatis DNA from cervicovaginal specimens following treatment with either doxycycline or azithromycin may persist in a small percentage of people for three to seven weeks. Persistence of C. trachomatis rRNA has also been shown in 8% and 21% of cervicovaginal specimens one week post-treatment with doxycycline and two weeks post-treatment with azithromycin respectively. The time to rRNA clearance in cervicovaginal specimens has been predicted at 16 to 18 days, though one study has shown persistence up to seven weeks post-treatment. DNA clearance from male urethral specimens is likely achieved sometime after two weeks post-treatment, though some studies have shown clearance after one week. Studies performed on first-catch urine specimens suggest that DNA and rRNA clearance is achieved by 10 days post-treatment.

Based on available evidence, it is currently recommended that test-of-cure with NAATs (where indicated) be performed three to four weeks after completion of appropriate therapy when clearance of DNA and rRNA from previously C. trachomatis infected sites is likely achieved by most people.

References

Answered by: Dr. Ameeita Singh
Dr. Michael Groeschel
Things to Do Before Prescribing a Statin

Should baseline CPK and LFTs be done for every patient being started on a statin? Or, is this not necessary given overall safety of these drugs?

Submitted by: Al-Noor N. Dhanani, MD, Mississauga, Ontario

Before starting statin therapy, patients should be educated about possible side effects, such as myositis and liver dysfunction. In order to monitor for statin toxicity, patients should be screened for symptoms of new muscle aches, fatigue, anorexia, nausea, and weight loss. Although there may be other side effects, the major risks of statin use are myositis or, rarely, rhabdomyolysis and abnormalities in liver function tests (LFTs). Liver failure may occur, although it is very rare with statin use alone. The incidence of LFT elevations, more than three times the upper limit of normal, is approximately 1 to 2%. Although elevation in LFTs is dose dependent, it can be idiosyncratic in some cases. Baseline LFTs should be checked and repeated four to six weeks after initiation, dosage change, change to another statin, or after initiation of any medication that may cause change in the metabolism of statins by the liver. However, a mild to moderate increase in LFTs to less than three times the upper limit of normal range is not a contraindication to continuing statin therapy.

Increase in creatine phosphokinase (CPK) in asymptomatic individuals before initiation of statin therapy is not uncommon. However, if patients develop symptoms suggestive of myositis, CPK should be checked and statin therapy should be discontinued if the CPK increases more than ten times the upper limit of normal. Although, there is no uniform agreement for lesser increase in CPK values, the dosage may be reduced and symptoms of myositis may resolve. Determination of serum aldolase may be more specific to identify muscle damage, if symptoms continue and CPK level is normal.¹

Reference


Answered by: Dr. Abdul Qayyum Rana
Dientamoeba fragilis is a parasite found in the gastrointestinal tract of some humans. It is distributed around the globe. Transmission is fecal-oral.

The parasite may cause gastrointestinal upset in some people but not in others. When it is symptomatic, it presents as abdominal pain, usually with diarrhea and anorexia. Symptoms may suggest irritable bowel. It is a cause of traveller’s diarrhea.

D. fragilis is found in stool samples, where identification requires specific expertise. Without microscopic examination of fixed and stained stool samples, the parasite may be missed. If it is identified as the sole pathogen in a symptomatic patient, treatment is indicated. Treatment is not recommended in an asymptomatic patient or when the pathogen is not the sole pathogen identified.

Metronidazole 500 mg three times a day for 10 days has been used successfully. Paromomycin 25 to 35 mg/kg per day in three divided doses may be more efficacious. Iodoquinol was once used commonly, but it is falling out of favour, as its availability is declining.

Answered by: Dr. Robert Bailey
Recurrent Bursitis

What is the best method of treatment for recurrent bursitis?

Submitted by: T. Gafoor, MD, Wakaw, Saskatchewan

Bursae are sac-like structures that provide mechanical protection to soft tissues overlying joints. Inflammation of this structure is called bursitis and is most commonly attributed to infection, gout, rheumatoid arthritis, or direct mechanical trauma. On first assessment, the bursae can be aspirated and analyzed for crystals or infection, and the appropriate course of therapy can be determined. Many cases of recurrent bursitis are due to direct mechanical damage. Kneeling predisposes patients to prepatellar bursitis; leaning on the elbows leads to olecranon bursitis; flexing the lower back without bending the knees leads to trochanteric bursitis; and certain sports or occupations can lead to shoulder bursitis. It is, therefore, important to educate patients to alter provoking activities, as well as to provide advice for joint protection (i.e., knee pads for those kneeling throughout the day).

Apart from modifying physical activities, initial treatment consists of a one to two week trial of regular NSAID use, and, when infection has been ruled out, localized corticosteroid injections can be a very helpful adjunct. In certain structures, such as the subacromial bursa and the iliopsoas bursa, physiotherapy can strengthen the musculature around the joint structure and minimize trauma to the area. In cases poorly responsive or refractory to localized corticosteroids, a surgical bursectomy would be an option to consider.

Answered by: Dr. Michael Starr
Dr. Alexander Tsoukas

Apart from modifying physical activities, initial treatment consists of a one to two week trial of regular NSAID use, and, when infection has been ruled out, localized corticosteroid injections can be a very helpful adjunct.
Thrombolysis after Chest Pain Resolution

In a rural setting, would you consider using a thrombolytic in a patient with acute ST elevation, myocardial infarction presentation, and ECG changes if the chest pain has resolved en route after nitroglycerine has been given by paramedics?

Submitted by: A. Wojciechowski, MD, Calgary, Alberta

If the chest pain has resolved and repeat ECG shows > 50% reduction in ST elevation, there is no indication for thrombolysis. If the chest pain has resolved, but there is no change or only minimal improvement in ST elevation, then I would give the thrombolytic drug. It is often difficult for patients to discern whether their pain has resolved completely, as opposed to a significant improvement in the level of pain or discomfort.

Patients with improvement in ST elevation without thrombolysis (such as the one described) are part of a high-risk subset of acute coronary syndrome. They have transient occlusion of a coronary artery without a large amount of myocardial necrosis and generally benefit from referral for percutaneous coronary intervention in the culprit coronary artery.

Answered by: Dr. Bibiana Cujec
Post-thyroidectomy Monitoring

What tests should be done to follow someone long-term after thyroidectomy for differentiated thyroid cancer?

Submitted by: Shirley Epstein, MD, Toronto, Ontario

The tests and their frequency depend on the overall risk of the patient (staging), completeness of surgery, if they received I-131 therapy, and the histology. However, at least the following should be done: clinical assessment, especially thorough head and neck exam, thyroglobulin (Tg), thyroglobulin antibody (TgAb), and TSH monitoring, and high resolution neck ultrasound (HRUS). Calcium levels may be required in some patients if there were issues with post-operative hypocalcemia. Select patients may require stimulated Tg and TgAb assessments, whole body radioactive iodine scans, and CT scans.

Answered by: Dr. Ally Prebtani
Induction of Labour with a Previous C-section

What are the current recommendations for induction of labour with a previous cesarean section?

Submitted by: K. Dautremont, MD, Moose Jaw

The indications for induction of labour in women with a previous cesarean section are the same as in women without previous cesarean. Induction of labour should only be considered when the benefits of delivery outweigh the potential maternal and fetal risks of induction. The most common reason is post-term pregnancy (41 completed weeks); other reasons include fetal compromise (significant growth restriction, non-reassuring fetal surveil-lance), maternal medical conditions (type I diabetes, renal disease, hypertension), chorio-amnionitis, abruption, and fetal death. Contraindications to induction of labour are more than one cesarean, prior classical or other high cesarean uterine incision, prior transmural uterine incision entering the uterine cavity (myomectomy), active genital herpes infection, placenta or vasa previa, transverse fetal lie, non-reassuring fetal heart rate tracing, and multiple gestation.

Oxytocin induction is not contraindicated; however, it is associated with an increased risk of uterine rupture and a lower rate of vaginal delivery compared to spontaneous labour. The risk of uterine rupture is higher if prostaglandins are used; they are, therefore, not considered safe in women with a previous cesarean delivery. If the cervix is completely unfavourable and there are compelling reasons for delivery, a repeat cesarean section should be considered.

Answered by: Dr. Victoria Davis

Resource
There are several case reports in literature describing distal, symmetrical, mainly sensory, peripheral neuropathy associated with the use of metronidazole. Metronidazole induced neuropathy is believed to be due to axonal degeneration of both the myelinated and unmyelinated fibres. Most cases of this type of peripheral neuropathy are due to a large daily dose of more than 2 g of metronidazole and a prolonged duration of therapy. Neurological examination and nerve conduction studies should be performed in patients who complain of paresthesias, pain, muscle cramps, weakness, or other abnormal sensations during treatment with metronidazole. Although there is no cure for this type of polyneuropathy, complete or partial resolution may occur after discontinuation of metronidazole. In some cases, however, it may take up to two years for symptoms to completely resolve. Thus, metronidazole should be used with caution when a prolonged course and larger dose are indicated. Medication, such as pregabalin, gabapentin, or tricyclic antidepressants (such as amitriptyline), may be helpful to manage pain caused by neuropathy. Other treatments, such as rehabilitation or physiotherapy, may provide some help in improving daily function.  

Reference  

Answered by: Dr. Abdul Qayyum Rana
Experts on Call

Overuse of LABAs with Steroids

Could you comment on the potential overuse of LABAs in combination with steroids that can worsen asthma by down-regulation of available lung receptors?

Submitted by: Anonymous

β2-agonists produce bronchodilation by stimulating receptors in airway smooth muscle leading to relaxation. β2-receptors are localized to the smooth muscle of all airways from the trachea to the terminal bronchioles. These agents also reverse bronchoconstriction caused by multiple triggers relevant in asthma (inflammatory mediators, exercise). The β2-agonists do not exert any significant anti-inflammatory effects. Inhaled long-acting β-agonists (LABA) include salmeterol and formoterol, which bronchodilate and protect against bronchoconstriction for > 12 hours.

Continuous treatment with an agonist often leads to tolerance, which may be caused by down-regulation of the receptor. Fortunately, tolerance of “nonairway” β-receptor responses (tremor, CV, metabolic) is readily induced in asthmatics. In the airway, tolerance to the bronchodilator effects of β2-agonists has usually not been found. However, tolerance does develop to the bronchoprotective effects of β2-agonists (protection against allergic exposure and exercise). However, this tolerance is limited by the high level of β2-receptor gene expression in airway smooth muscle, does not seem to be progressive, and is of doubtful clinical significance. Experimental studies have shown that corticosteroids can prevent this tolerance and reverse the fall in pulmonary β2-receptors. However, inhaled corticosteroids do not seem to completely prevent the tolerance to the bronchoprotective effect of the inhaled β2-agonists. Still, it is recommended that LABA should only be used in patients using inhaled corticosteroids (ICS).

The link between high short-acting β2-andrenergic agonist (SABA) use and increased mortality that has been noted in the past does not prove a causal association. Patients with more severe and poorly controlled asthma are more likely to have an increased rate of fatal attacks, are more likely to be using higher doses of SABA, and are less likely to be using regular anti-inflammatory treatment. In patients who regularly used inhaled corticosteroid, there was no significant increase in the risk of death. More recently a trial of salmeterol vs. placebo in more than 26,000 patients with asthma showed a small, but significant, increase of asthma mortality in LABA treated patients. However, subgroup analysis showed that most of these deaths occurred in African Americans and were likely caused by failure to use concomitant inhaled corticosteroid, and perhaps by genetic differences in β2-receptors. In Caucasians, there were no differences noted. This has led to the controversial black box warning on the LABA medications. This issue is also highlighted in a recent meta-analysis showing that discontinuing LABA therapy in patients after asthma has been brought under control with LABA/ICS combination treatment can lead to increased asthma impairment. The overwhelming evidence suggests improved control of asthmatics with combined LABA/ICS when not controlled by inhaled corticosteroids alone. LABAs should never be used as monotherapy. Combining inhaled corticosteroids with LABAs in single inhalers has eliminated the risks of this potential problem.

References

Answered by: Dr. Tom Gerstner
Pregabalin vs. Gabapentin for Neuropathic Pain

Is pregabalin preferable to gabapentin for neuropathic pain?

Submitted by: Michel Pagé, MD, Pierrefonds, Québec

Both of these agents have an affinity to $\alpha_2\delta$ protein in the CNS and have good efficacy for neuropathic pain. Pregabalin provides similar efficacy to gabapentin at a much lower dose, because it has a higher bioavailability, is rapidly absorbed, and the plasma concentrations increase linearly with increasing dosage. Whereas, gabapentin is slowly absorbed and plasma concentrations have a non-linear relationship to increasing doses. Pregabalin not only has pharmacokinetic advantages over gabapentin but is also about 2.5 times more potent than gabapentin according to some reports.

In one study, Rodriguez et al., estimated analgesic outcomes in painful diabetic peripheral neuropathy or postherpetic neuralgia with pregabalin versus gabapentin and concluded that pregabalin may provide better analgesic results than gabapentin over a three-month period. However, further head-to-head trials may be necessary to answer this question with certainty. The current literature provides evidence supporting pregabalin over gabapentin due to its greater potency and better pharmacokinetic mechanism.

References


Answered by: Dr. Abdul Qayyum Rana

Pregabalin not only has pharmacokinetic advantages over gabapentin but is also about 2.5 times more potent than gabapentin according to some reports.
Diagnosing Bed Bug Bites

How are bed bug bites diagnosed and treated?

Submitted by: Steve Choi, MD, Oakville, Ontario

Bed bug bites are caused by the common bed bug *Cimex lectularius*. Diagnosis can be suspected when erythematous pruritic papules occur on exposed areas of skin, especially while sleeping, as bed bugs tend to bite at night. The papules are frequently linear or grouped. The individual lesions often have a hemorrhagic punctum in the centre, as bed bugs inject an anticoagulant during bites. Bites are often painless, as bed bugs also inject an anesthetic during bites.

The bites themselves are usually self-limited, resolving spontaneously over several weeks. Treatment of the bites themselves is symptomatic with mid-potency topical corticosteroids and oral sedating antihistamines.

Ultimately, treatment of bed bugs involves eradicating them from the infested surroundings. This can be difficult, as they frequently hide in crevices during the day. It is often necessary to seek the assistance of an experienced pest control company that can eliminate the insects using both pesticides and other physical methods (such as heat).

Answered by: Dr. Richard Haber