Answers to your questions from our medical experts

1. Potential Complications of Maternal Shingles

Can maternal shingles cause problems in pregnancy or in the neonate?

Submitted by: Anita Greig, MD, Toronto, Ontario

Maternal shingles is relatively uncommon and there is no evidence to suggest that it leads to any problem in pregnancy or to the neonate. Shingles represents the reactivation of the virus after a period of dormancy, thus the mother is already immune and the fetus protected. The treatment is similar for the women who are pregnant and those who are not (acyclovir, valacyclovir, famciclovir, pain relief excluding NSAIDs in the third trimester). Shingles can be transmitted as chickenpox so the patient should avoid other pregnant women.

Answered by: Dr. Victoria Davis

2. Treating CIDP

What is the current treatment for chronic inflammatory demyelinating polyneuropathy (CIDP)?

Submitted by: Robert Ecclestone, MD, Langley, British Columbia

At this time, there are three regimens that have been shown to be equally effective in the treatment of CIDP:

- IV immune globulin (IVIg),
- plasmapheresis and
- corticosteroids.

There have been no large-scale trials directly comparing the efficacy of the three different agents. What guides treatment is usually very practical concerns, such as availability of regular treatment (which can be a problem with plasmapheresis) and side-effects (which can be a major problem with long-term steroid use). For most people, the mainstay of treatment is chronic, usually monthly, administration of IVIg.

If these treatments are not successful, other immune suppressant agents have been tried in small trials. Interferons have also been tried. However, there are no clear results at this time.

What is clear is that the earlier that treatment is started, the better the response, no matter what treatment is used.

Resource
1. Köller H, Kieseier BC, Jander S, et al: Chronic Inflammatory Demyelinating Polyneuropathy. N Engl J Med 2005; 352(13):1343-56.

Answered by: Dr. Inge Loy-English

3. Sleep Apnea and Congestive Heart Failure

What is the relationship between sleep apnea and congestive heart failure (CHF)? Should all patients with CHF have a sleep study?

Submitted by: Gerard Hamilton, MD, Belleville, Ontario

Sleep apnea is a risk factor for increased morbidity and mortality from CV conditions, such as hypertension.[1] Central sleep apnea and obstructive sleep apnea have both been reported to be frequently present (approximately 15% to 40%) in patients with CHF.[2] As sleep-disordered breathing has a negative impact on the prognosis of CHF, some authors have recommended that a sleep study be performed in every patient with CHF. However, definitive studies are still needed to demonstrate that improvement in clinically relevant outcomes can be obtained with treatment of sleep-disordered breathing in patients with concomitant CHF.

References
1. Flemons WW: Obstructive Sleep Apnea. N Engl J Med 2002; 347(7):498-504.
2. Bradley TD, Logan AG, Kimoff RJ, et al: Continuous Positive Airway Pressure for Central Sleep Apnea and Heart Failure. N Engl J Med 2005; 353(19):2025-33.

Answered by: Dr. Paul Hernandez

4. Terbinafine and Hair Changes

One of my patients has fungus of his toenails. After five months of terbinafine, the toenails are coming along well, with almost total clearing of the fungus. This man is 46, had gray hair before treatment, but since being on terbinafine, his hair is growing in dark black (like when he was a child). Is this related to terbinafine?

Submitted by: Dennis Glubish, MD, St. Albert, Alberta

This is an unusual scenario. This man's hair growing in black is almost certainly not related to his being on oral terbinafine. I am not aware of any reports of this in the literature and cannot postulate any reason this would happen with oral terbinafine.

One possible explanation would be if this man had diffuse alopecia areata which often spares white hair and then had spontaneous regrowth of the alopecia areata with new pigmented hairs, but there is no mention in your history of any alopecia in your patient. I have no other explanation for this phenomenon.

Answered by: Dr. Richard Haber

5. When Not to Use Antidepressants

When are antidepressants not indicated in depression?

Submitted by: Paul Steinberg, MD, Edmonton, Alberta

When the depressed mood is due to an adjustment disorder triggered by a psychosocial stressor, such as a job loss or a relationship break-up, then psychological treatment, either individual or group therapy using cognitive-behavioural therapy (CBT) or interpersonal therapy (IPT), may be the first line of treatment, before prescribing an antidepressant. Also, in psychotic depression, antidepressants should be prescribed only in combination with an antipsychotic medication, to address both the depressed mood and the psychotic symptoms (*e.g.*, mood congruent delusions). Prescribing antidepressants alone may aggravate the psychotic symptoms.

In depressed patients who are imminently suicidal, antidepressants should be prescribed only after the patient is hospitalized, otherwise, antidepressants prescribed to an imminently suicidal outpatient could provide the patient with the required energy to commit suicide before improving his/her mood. In pregnancy and during breastfeeding, antidepressants should be prescribed very cautiously and only when the severity of the depressive symptomatolgy and/or the risk of suicide warrant the risk of prescribing an antidepressant during pregnancy. Most antidepressants have not been formally evaluated in pregnant women (due to obvious ethical considerations) and the information available is mostly based on animal studies and case histories of individual patients who took an antidepressant during their pregnancy. To date, sertraline and fluoxetine are considered relatively safe during pregnancy and breastfeeding. Paroxetine is contraindicated during pregnancy due to its potential to cause teratogenic malformations in the fetus. No information is yet available on the following antidepressant medications regarding their use in pregnancy and during breastfeeding:

- citalopram,
- escitalopram,
- venlafaxine and
- bupropion.

Answered by: Dr. Hany Bissada

6. Differing BP Readings

What can cause a patient to have a BP of 170/120 mmHg in her left arm and 150/80 mmHg in her right arm?

Submitted by: Stephen Ng, MD, Toronto, Ontario

A systolic BP difference of > 10 mmHg between arms is abnormal and means that there is some sort of vascular obstruction on the side of the arm with the lower BP. The higher BP should be used as the patient's systemic BP. Possible causes of obstruction of the subclavian artery include:

- Atheromatous stenosis (most common cause)
- Acute embolism (thrombus, vegetation or rarely tumour from the heart)
- Takayasu's arteritis
- Aortic dissection
- Thoracic outlet obstruction (pitchers or golfers may develop a kink in the subclavian artery as it goes over the first rib)
- Blalock-Taussig shunt for cyanotic congenital heart disease (the subclavian artery may be attached directly to the pulmonary artery)

Subclavian artery stenosis may result in upper extremity claudication (discomfort with exertion using the arms) or a subclavian steal syndrome if the stenosis is proximal to the origin of the vertebral artery. Using the arms will result in retrograde flow down the ipsilateral vertebral artery and vertebro-basilar insufficiency with symptoms of ataxia, vertigo, diplopia and hemianopia.

Investigations should start off with a chest x-ray and an ultrasound of the carotid and subclavian arteries.

Answered by: Dr. Bibiana Cujec

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7. Treating Skin Atrophy Due to Steroids

Is there a treatment for atrophy of the skin secondary to the use of steroids?

Submitted by: André Rivard, MD, St-Jean-sur-Richelieu, Quebec

Topical steroids should not be applied for a prolonged period. Atrophy of the epidermis and dermis with telangiectatic skin may occur in some patients even after two to three weeks. Topical steroids have an antiproliferative effect and this may result in thinning of the epidermis and regressive changes in the connective tissue in the dermis. Striae, skin atrophy, telangiectasis, persistent erythema and purpura may occur. The face, dorsa of the hands, extensor surfaces of the forearms and legs and intertriginous (groin, axilla) areas are particularly susceptible. Infants, children and the elderly are particularly susceptible to striae, atrophy and purpura; steroid use should be with caution.

Unfortunately, there is no special treatment for atrophy of the skin secondary to steroid use. Patients should discontinue applying any topical steroids to the affected area. Instead, consider the use of topical immunomodulators (*e.g.*, pimecrolimus, tacrolimus) which do not cause atrophy with prolonged use.

Answered by: Dr. Charles Lynde; and Dr. John Kraft

8. Pregabalin for Fibromyalgia

Can you comment on the use of pregabalin in treating fibromyalgia?

Submitted by: Jean Therrien, MD, Hawkesbury, Ontario

Pregabalin is an anticonvulsant drug, used mostly for neuropathic pain. In June 2007, it became the first FDA-approved drug specifically for the treatment of fibromyalgia. Several studies have shown efficacy in doses of 300 mg or 450 mg q.d. In April 2005, a study of 529 patients published in *Arthritis and Rheumatism* demonstrated pregabalin to be effective in improving sleep, decreasing fatigue, reducing pain (by about 50%) and improving vitality. The most common side-effects were dizziness and somnolence. Similar results have been replicated in other studies. It is recommended to initiate treatment with 50 mg b.i.d./t.i.d. and to titrate up to the most effective and well-tolerated dose (usually about 300 mg to 450 mg in divided doses per day).

Fibromyalgia is a difficult and frustrating condition to treat. Although not all patients will have an adequate response, pregabalin offers an FDA-approved option to treat these patients.

Resource

1. Crofford LJ, Rowbotham MC, Mease PJ, et al: Pregabalin for the Treatment of Fibromyalgia Syndrome: Results of a Randomized, Double-Blind, Placebo-Controlled Trial. Arthritis and Rheumatism 2005; 52(4):1264-73

Answered by: Dr. Michael Starr

9. Cross-Reactivity of Coconut and Peanuts

Someone with documented anaphylaxis to peanuts gets initial symptoms only from eating coconut-related foods. These symptoms were improving, but recently have been getting worse again, so he is avoiding coconut. Please explain.

Submitted by: J. Molson, MD, Kingston, Ontario

Firstly, more information on the symptoms reported in this patient would be helpful—their nature, timing, pattern, location, consistency, *etc*. In an IgE or cell-mediated allergy, although symptoms could vary, it would be very unusual to show a pattern of overall improvement, then deterioration.

Coconut is a very different plant from peanut or tree nuts. The coconut palm tree is a native of the tropics. The fruit of the palm is known as the "coconut." Allergic reactions to peanut and tree nuts are relatively common, estimated to occur currently in around 1/100 young children and 1/200 adults. By contrast, allergic reactions to coconut are extremely rare. Few cases of allergic reactions from eating coconut products have been reported thus far, including one case of severe stomach upset in a baby fed coconut-containing infant formula. Another six cases reported have been those of serious allergic reactions (anaphylaxis). Some have been found to be allergic to tree nuts, like walnut and hazelnut, as well as coconut and allergic responses have been found to similar proteins present in both types of foods (*i.e.*, cross-reactivity). Others have been allergic to coconut only. No cases related to peanut have been reported.

Of note, contact dermatitis to coconut is more common than food allergy. Coconut-derived products (such as coconut diethanolamide, cocamide sulphate, cocamide diethanolamine) can cause contact allergic dermatitis, present in cosmetics including some hair shampoos, moisturizers, soaps, cleansers and hand washing liquids.

For your patient, I would suggest an assessment by an allergist who would, after detailed history and appropriate immunologic investigations (including skin testing), clarify whether your patient is truly allergic to coconut, or if other factors are at play, such as ingestion of foods with peanut contamination.

Resources
1. Tella R, Gaig P, Lombardero M, et al: A Case of Coconut Allergy. Allergy 2003; 58(8):825-6.
2. Dejobert Y, Delaporte E, Piette F, et al: Eyelid Dermatitis with Positive Patch Test to Coconut Diethanolamide. Contact Dermatitis 2005; 52(3):173.
3. Teuber SS, Peterson WR: Systemic Allergic Reaction to Coconut in Two Subjects with Hypersensitivity to Tree Nut and Demonstration of Cross-Reactivity to Legumin-Like Seed Storage Proteins: New Coconut and Walnut Food Allergens. J Allergy Clin Immunol 1999; 103(6):1180-5.

Answered by: Dr. Tom Gerstner

10. Treating a Borderline LDL-C Level

What should we do with a patient who has an LDL-C of 4.9 mmol/L and no other vascular risk factors?

Submitted by: Jean Therrien, MD, Hawkesbury, Ontario

If the patient does not have known coronary or other vascular disease and does not have diabetes, the Framingham risk score should be calculated.[1] This score assigns a 10-year probability of a CV event based upon age, smoking status and systolic BP in addition to total cholesterol and HDL-C levels. If the patient has a 10-year risk of a coronary event that is < 10%, then the current Canadian Cardiovascular Society guidelines do not recommend drug therapy unless the LDL-C is > 5.0 mmol/L or the ratio of total cholesterol/HDL-C is > 6.0. Obviously, serum cholesterol is a continuous variable and there is incremental risk with increasing cholesterol levels. The Framingham risk over 10 years is a short timespan in the expected remaining years of life left for a person who is in their third or fourth decade of life and their lifetime risk of coronary artery disease (CAD) is significantly higher.

I would definitely prescribe a statin to a patient with an LDL-C that is consistently in the 4.5 mmol/L to 5.0 mmol/L range (or even > 3.5 mmol/L) if there is a family history of CAD or if there are other markers of increased risk such as elevated lipoprotein (a), high-sensitivity C-reactive protein, or homocysteine level.

Most importantly, I would reinforce the importance of lifestyle changes to this patient and monitor their cholesterol profile on an annual basis to provide them with feedback on their behavioural changes. The patient should be advised to exercise for at least 30 minutes on a daily basis and maintain an ideal weight with a BMI that is < 25 kg/m^2.

Reference
1. McPherson R, Frohlich J, Fodor G, et al: Canadian Cardiovascular Society Position Statement—Recommendations for the Diagnosis and Treatment of Dyslipidemia and Prevention of Cardiovascular Disease. Can J Cardiol 2006; 22(11):913-27.

Answered by: Dr. Bibiana Cujec

11. Confirming Adrenal Insufficiency

What is the best adrenocorticotropic hormone stimulation test to confirm adrenal insufficiency?

Submitted by: Ting H. Hii, MD, Trail, British Columbia

When adrenal insufficiency is suspected, the cosyntropin test is reliable and easy to perform. A baseline cortisol level is first drawn. Next, 0.25 mg of cosyntropin is given intravenously. Blood is drawn for cortisol at 30 and 60 minutes. The stimulated cortisol level should be > 560 mmol/L.

Answered by: Dr. Vincent Woo

12. The Treatment of Choice for Bipolar Disorder

Is lithium still the treatment of choice for bipolar disorder, or has it been replaced with lamotrigine?

Submitted by: Dimitry Raouf, MD, Lachine, Quebec

The first-line pharmacological treatment for a severe manic or mixed episode is the initiation of either lithium plus an atypical antipsychotic, or valproate plus an atypical antipsychotic. For less ill patients, monotherapy with lithium, valproate, or an antipsychotic such as olanzapine may be sufficient. Short-term adjunctive treatment with a benzodiazepine may also be helpful.

The first-line pharmacological treatment for bipolar depression is the initiation of either lithium or lamotrigine. Antidepressant monotherapy is not recommended. For more severely depressed patients, simultaneous treatment with lithium and an antidepressant may be recommended.

The medications with the best empirical evidence to support their use in maintenance treatment include lithium and valproate; possible alternatives include lamotrigine or carbamazepine. If one of these medications was used to achieve remission from the most recent manic or depressive episode, then that medication should be used for maintenance therapy.

It is worth noting that a series of preliminary reports and four placebo-controlled trials have suggested that lamotrigine has antidepressant and possibly mood-stabilizing properties; however, its acute antimanic effects have not been demonstrated in controlled studies.

Resources
1. American Psychiatric Association Practice Guidelines for the Treatment of Psychiatric Disorders, 2006.
2. Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 8th Edition. Chapter 13.8.

Answered by: Dr. Hany Bissada

13. Treating Recurring Tinea Corpora in Children

How do you treat children with recurring tinea corpora?

Submitted by: D. So, MD, Mississauga, Ontario

Treating children with recurrent tinea corporis is no different than treating adults with the same condition. It is most important that there is mycologic confirmation of the diagnosis and that the diagnosis of tinea corporis is not just made clinically. As well, fungal culture will speciate the dermatophyte and will establish if it is anthropophilic (human to human spread) or zoophilic (animal to human spread).

If the dermatophyte is zoophilic and the tinea corporis is recurrent, household pets (especially dogs and cats) would have to be looked at as source and treated appropriately.

If the dermatophyte is anthropophilic, the child should be fully examined to exclude onychomycosis (much less common in children than in adults), tinea capitis or other areas of chronic fungal infection which could act as a continuing source of recurrence of the tinea corporis. Usually onychomycosis and tinea capitis would require oral antifungal therapy to clear these sites.

If the child has recurrent tinea corporis and no evidence of a dermatophyte at other sites, family members would need to be examined looking for a source of the recurrent fungal infection, as treatment of the child would require treatment of the affected family member.

As far as treatment recommendations, multiple topical antifungal agents are available to effectively treat tinea corporis. Topical terbinafine applied once daily for one to two weeks and for one additional week after skin is clinically clear is fungicidal. For extensive or recurrent tinea corporis, oral terbinafine q.d. can be used for one to two weeks. The dose in children is 5 mg/kg q.d. but an easier dosing schedule is:

- < 20 kg, use 62.5 mg q.o.d.,
- 20 kg to 40 kg, use 125 mg q.o.d. and
- > 40 kg, use 250 mg q.o.d.

Answered by: Dr. Richard Haber

Treating children with recurrent tinea corporis is no different than treating adults with the same condition.

14. How to Remove a Wax Plug

Is it safe to use a syringe and water to remove a wax plug in the external auditory canal, or should we refer the patient to the specialist who has better instruments to do this technique? The waiting period could take longer for the second option.

Submitted by: Fernand Arseneau, MD, Moncton, New Brunswick

A multitude of techniques have been described to deal with wax plugs and initially it is worthwhile considering softening and dissolution with olive oil or sodium bicarbonate ear drops. The use of cotton buds is discouraged since it may further impact wax rendering its subsequent removal more awkward. Syringing with water is often the technique most readily available outside of specialist practice. It requires relatively little in the way of specialized equipment and is best performed by pulling the external ear up and back and aiming the nozzle of the syringe slightly upwards and backwards so that a gentle stream of water flows along the roof of the canal, dislodging wax and debris. Though generally safe, complications such as tympanic membrane perforation, ear canal laceration, ear infection, or hearing loss occur at a rate of 1 in 1,000 ear irrigations. It is therefore essential that the procedure is performed only by individuals that have adequate training.

So, when should patients be referred for specialist removal of a wax plug? Recent guidelines from the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNSF) state that treatment methods used should depend on:

1. Available resources
2. Experience of the treating clinician with the appropriate options
3. The ease with which the canal can be cleared

Whilst this necessarily places the onus upon the judgment of individual clinicians, it is generally acknowledged that ear syringing should not be performed in individuals who have had ear surgery or have a non-intact tympanic membrane. If it is not possible to visualize the tympanic membrane at the time, clinicians may sometimes have to rely on history alone to establish this. The AAO-HNSF also advises caution with irrigation in individuals with diabetes, for fear of potential malignant otitis externa and those with anatomic abnormalities of the ear canal (congenital malformations, osteomas, exostosis, scar tissue, *etc*.) that might trap water in the external canal.

Answered by: Dr. Jonathan Irish; and Dr. Sanjay Verma

15. Headaches Post Anesthetic

What is the diagnosis and treatment of a patient with a headache after spinal anesthetic or epidural anesthetic?

Submitted by: Bruce Ramsey, MD, Edmonton, Alberta

After any puncture of the spinal dura, patients are at risk of a low pressure headache. The typical presentation is a headache that is usually generalized, increasingly severe as the patient sits then stands up, but is almost immediately gone as soon as they lie down. Diagnosis is based on the history of a dural puncture of some kind (usually iatrogenic), the typical headache and ruling out a more serious neurologic complication, such as infection, or hemorrhage/hematoma at the site.

Once diagnosis is made, treatment is simple. The patient should lie flat and drink fluids as much as tolerated, until the postural headache subsides. Caffeine may also help. If this is not successful within about three days, then referral to an anesthetist for a blood patch is required.

Answered by: Dr. Inge Loy-English

16. Modafinil for Sleep Apnea

Is modafinil approved for use in Canada for obstructive sleep apnea-hypopnea syndrome?

Submitted by: Brian Fernandes, MD, Edmonton, Alberta

Modafinil is a central nervous system stimulant indicated for use in Canada for the symptomatic treatment of excessive sleepiness in adult patients with narcolepsy, obstructive sleep apnea-hypopnea syndrome (OSAHS) and shift work sleep disorder.[1] In OSAHS, modafinil is indicated as adjunctive therapy when excessive sleepiness occurs despite institution of standard therapy (*e.g.*, continuous positive airway pressure). Physicians prescribing modafinil should be aware that this drug is associated with a number of serious side-effects including life-threatening skin reactions, other serious hypersensitivity reactions and psychiatric symptoms. Modafinil is not recommended for use in patients with certain CV conditions and has numerous reported drug-drug interactions.

Reference
1. Alertec® Modafinil Product Monograph. Version February 14, 2007. The Compendium of Pharmaceuticals and Specialties. Carol Repchinsky (Ed.). Canadian Pharmacists Association. Ottawa, Ontario. pp. 93-95.

Answered by: Dr. Paul Hernandez

17. The Best Treatment for Poison Ivy

What is the best treatment for poison ivy dermatitis?

Submitted by: D. Eustache, MD, Saskatoon, Saskatchewan

Poison ivy dermatitis is a classic example of an allergic contact dermatitis, or a delayed-type hypersensitivity to an allergen that comes in contact with the skin. Poison ivy, *Toxicodendron radicans*, is a plant in the same family as poison oak and poison sumac. It produces a resinous sap containing urushiol, the allergen triggering the contact dermatitis.

Ideally, avoidance of the plant is the best strategy. The plant is often easily identified as a woody vine with leaves in groups of three, hence the expression: "Leaves of three, let it be; leaves of four, eat some more."

Assuming a patient comes into contact with poison ivy and presents with the classic acute pruritic eruption of erythematous, linear vesicles and bullae, good treatment options are available. If untreated, the lesions and itch can persist for up to one month. Scratching frequently transfers urushiol to different body sites that did not contact the plant originally. With treatment, lesions and itch rarely last beyond two weeks.

Patients can use cool, wet compresses for local relief. Super potent topical steroids can be used on acute blistering areas and may be sufficient if the reaction is localized.

Most patients will require a tapering course of systemic corticosteroids starting with 0.75 mg/kg to 1 mg/kg. They should be warned about potential side-effects of corticosteroids, especially ones that are serious and rare such as avascular necrosis of the hip. Treating for five days is often insufficient as new lesions could develop after this period. One option may be prednisone 0.75 mg/kg to 1 mg/kg decreasing by 10 mg every two days until zero.

Patients should avoid other plants in the *Anacardiaceae* family that can cross react with poison ivy, such as:

- mango trees,
- cashew trees,
- Japanese lacquer and
- ginkgo.

Answered by: Dr. Charles Lynde; and Dr. John Kraft

18. Advantages of Long-Term Varenicline Use

Is there any advantage of using varenicline for > 12 weeks?

Submitted by: Simon Bernatchez, MD, La Sarre, Quebec

Varenicline belongs to the class of medications called smoking cessation therapies. It is specifically designed to partially activate the nicotinic receptors in the brain and reduce a smoker's craving and withdrawal symptoms. Moreover, if a person smokes a cigarette while receiving treatment, varenicline has the potential to diminish the sense of satisfaction associated with smoking.

The usual starting dose of varenicline is 0.5 mg q.d for the first three days, then 0.5 mg b.i.d. for the next four days, then 1 mg b.i.d. thereafter. Varenicline should be taken with a full glass of water after a meal.

Varenicline is intended to be used in combination with quit-smoking education and counselling. Treatment should start one to two weeks before the date the person has set to quit smoking (the "quit date") and continue for 12 weeks. For those who succeed in quitting smoking during this time, an extra 12 weeks of treatment may be recommended to reduce the risk that they will start smoking again. People who fail to quit smoking during the first 12 week treatment are encouraged to try again once they have identified and addressed the factors that may have caused them to have trouble quitting.

Varenicline should not be taken by patients who are already on a nicotine replacement therapy to quit smoking.

Answered by: Dr. Hany Bissada

19. Working-Up an Abnormal eGFR

How do you workup an abnormal estimated glomerular filtration rate (eGFR)? What if the creatinine level is normal? When do you initiate referral to a nephrologist when eGFR is abnormal?

Submitted by: Michelle Sue, MD, Toronto, Ontario

eGFR is now becoming a widely available means for detection and screening of chronic kidney disease. Detection of an abnormal eGFR (30 mls/min to 60 mls/min) should be followed by a repeat measure in two to four weeks as renal function varies with hydration status, intercurrent illness and medications (*e.g.*, NSAIDs). An assessment of proteinuria should be performed by urinalysis, albumin to creatinine ratio (ACR) or a protein to creatinine ratio (PCR). A normal creatinine does not equal a normal eGFR (hence the introduction of the eGFR to measure renal function). For example, an eGFR in a 90-year-old female who weighs 40 kg with a normal range creatinine measurement of 90 µmol/L is 22 mLs/min/1.73 m^2! Referral to a nephrologist is appropriate in patients who have acute renal failure, eGFR < 30 mL/min/1.73 m^2, progressive loss of renal function, persistent proteinuria (on two out of three measurements) or inability to control BP.

From the Canadian Society of Nephrology Guidelines.

Answered by: Dr. Mannish Sood

20. Atrial Hypertrophy in Patients with Atrial Fibrillation

In patients with AF, does left atrial hypertrophy carry a negative prognostic outcome?

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

Atrial fibrillation (AF) is a very common arrhythmia and occurs in the presence or absence of a number of clinical cardiac risk factors (*i.e.*, hypertension and diabetes). Echocardiography has also been used to evaluate the risk of developing new AF, the risk of recurrences of AF and the prognosis of patients in the presence of chronic AF. Increase in left atrial size by 5 mm has been associated with an increased risk of up to 40% of developing AF. In patients with chronic AF, those with enlarged left atria do have an increased risk of adverse cardiac-related events, such as stroke and heart failure. Lastly, in the presence of increased left atrial dimensions, patients will be more likely to have recurrences of AF after cardioversions and less likely to have successful cardioversion to sinus rhythm.

Answered by: Dr. Richard Sheppard

21. Benign Positional Vertigo

What is the best recommendation to give a patient with benign positional vertigo?

Submitted by: Anonymous

Benign positional vertigo (BPV) is one of the most common, recognizable and treatable forms of vestibular pathology. The diagnosis is usually made by a typical history of short episodes of vertigo triggered by a certain head position or movement and by pathognomonic findings on Dix-Hallpike test. Although called "benign" because of usually self-limited natural history, positional vertigo often presents a frightening experience for patients, preventing them from certain daily activities and normal range of movements. If properly diagnosed, BPV can be successfully treated by repositioning maneuvers performed by a physician (particle repositioning procedure, Epley maneuver, Semont liberatory maneuver) or by the patient, performing Brandt-Daroff exercises or using the recently designed Easy-Fix™ device.

In case of prolonged intractable positional vertigo a highly effective surgical option, a semicircular canal occlusion procedure, is available. Positional vertigo, being benign in the majority of cases, can mimic more ominous conditions, such as cerebellar tumours, infarcts or vestibular schwannomas. Physical findings in these conditions are usually of "atypical positional vertigo" and will require a further investigation to rule out serious intracranial pathology. Unfortunately, many patients are not aware of potential risks and the treatment existing for their positional symptoms. Not infrequently, patients avoid certain positions associated with vertigo for several months or years before seeing a medical practitioner. Therefore, the best advice to a patient with positional dizziness is to see a specialist for a proper diagnosis and treatment.

Answered by: Dr. Jonathan Irish; and Dr. Vitaly Kisilevsky

22. The Different Types of Serum Calcium

When we order serum calcium, what is the difference between calcium, ionized calcium and corrected calcium?

Submitted by: John Tam, MD, Toronto, Ontario

Total calcium consists of free or ionized calcium (about 50%), calcium that is protein bound, (mostly to albumin, about 40% to 45%) and calcium complexed to anions (*e.g.*, citrate, lactate and bicarbonate [about 5% to 10%]).

Ionized calcium is the form that is readily available to cells and so reflects the metabolically active form of calcium. It is therefore a more accurate reflection of the calcium state, since the total calcium measure does not indicate what is truly available at the cellular level.

Ionized calcium, unlike total calcium, is not affected by the albumin level and so measures of total calcium may need to be corrected under conditions where albumin levels are abnormal. In this situation, the ionized calcium would be a better measure of calcium balance.

Note also that ionized calcium may be affected by the acid-base balance and thus in acidosis there may be an increased ionized calcium, while it may be decreased in alkalotic states.

Answered by: Dr. Ahmad el-Enizi; and Dr. Michael Starr

23. Preventing Osteoporosis in Early Menopause

What are the recommendations for the prevention of osteoporosis in women who have early menopause (late 30s to early 40s)?

Submitted by: Eric Landriault, MD, Orleans, Ontario

Women with normal ovarian function achieve peak femoral BMD in their early 20s. Approximately 1% of women < 40-years-of-age develop spontaneous premature ovarian failure for a variety of reasons.

Women with premature ovarian failure are at increased risk of developing osteoporosis and studies have shown that in the absence of exogenous estrogen, BMD is significantly lower in comparison to age matched controls.

Because of this data, unless there is a contraindication to taking estrogen therapy, women with premature ovarian failure should receive estrogen therapy to prevent bone loss (in almost all cases with a progestin, as most of these patients have an intact uterus). This should continue until the age of 50 at which time the use of hormonal therapy should be re-evaluated for each individual patient.

In addition to estrogen therapy for prevention of bone loss, other important measures for bone health should be emphasized, including exercise, a healthy diet, adequate calcium and vitamin D intake and avoiding smoking.

Resource

1. Uygur D, Sengül O, Bayar D, et al: Bone Loss in Young Women with Premature Ovarian Failure. Arch Gynecol Obstet 2005; 273(1):17-9.

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

24. Recent Guidelines for Treating Hypertension

What has changed in the recent guidelines regarding the treatment of hypertension?

Submitted by: **E. Gibbings, MD,** Regina, Saskatchewan

Key messages from the 2008 Canadian Hypertension Education guidelines (available at www.hypertension.ca) include:

- Encourage hypertensive patients to use an approved BP measuring device and use proper technique to assess BP at home. BP measured at home is a stronger predictor of CV events than office-based readings. Hypertension is defined as an average home systolic BP > 135 mmHg or an average home diastolic BP > 85 mmHg. Home measurement can help to confirm the diagnosis of hypertension, improve BP control, reduce the need for medications, help to identify white coat and masked hypertension and improve medication adherence
- All Canadian adults need to have BP assessed at all appropriate clinical visits. One in five adult Canadians has hypertension and for those aged 55 with normal BP 90% will develop hypertension if they live to an average age. All adults require ongoing assessment of BP throughout their lives
- Optimum management of BP requires assessment of overall CV risk. Over 90% of hypertensive Canadians have other CV risks. Identifying and managing these other risks (*e.g.*, unhealthy diet, inactivity, abdominal obesity, dyslipidemia, smoking) can reduce CV disease by > 60% in hypertensive patients
- Lifestyle modifications are effective in reducing BP and CV risk. BP is lowered and other CV risks are favorably impacted by a healthy diet, regular physical activity, moderation in alcohol, reductions in dietary sodium and in some, stress reduction
- Treat to target. In general, BP should be lowered to < 140/90 mmHg and in those with diabetes or chronic kidney disease, to < 130/80 mmHg
- Combinations of therapies (both drug and lifestyle) are generally necessary to achieve target BP. Most patients require more than one antihypertensive drug and lifestyle changes to achieve recommended BP targets. Combination therapy with two first-line drug classes should be used as initial therapy if systolic pressure is > 20 mmHg above target or if the diastolic pressure is >10 mmHg above target

For resources, please contact **diagnosis@sta.ca**

Answered by: **Dr. Bibiana Cujec**

25. Digital Myxoid Cysts

What treatment approach do you recommend for recurrent digital myxoid cysts?

Submitted by: Bill Taylor, MD, Medicine Hat, Alberta

A digital myxoid cyst or pseudocyst is a ganglion of the distal interphalangeal (DIP) joint. It presents as a translucent nodule on the dorsum near the DIP, often with a depressed nail distal to the cyst.

Diagnosis can be confirmed in the office by a simple transillumination test. Drainage of a clear, jelly-like fluid is diagnostic. MRI is rarely used to confirm the diagnosis and the location of a communicating pathway between the cyst and the joint space.

Digital myxoid cysts can be painful and there may be associated nail deformities and osteoarthritis. The goals of therapy are to remove fluid and to prevent further escape from the joint. With simple drainage, there may be relapse within a month. Drainage followed by injection with triamcinolone acetonide can help prevent relapse.

Another means of preventing fluid escape is to induce scarring within the cyst by treating with cryotherapy after drainage. Caution should be taken to prevent impairment of the range of motion of the DIP, or cause injury to the nail matrix.

Depending on patient preferences, or severity, cyst excision is more definitive. Surgical removal of osteophytes can help prevent recurrence, as these bony prominences exacerbate myxoid cysts. Techniques exist for identification and subsequent ligature of the connection from the cyst to the joint capsule.

Answered by: Dr. Charles Lynde; and Dr. John Kraft

26. A Varying PR Interval

In a seemingly healthy subject, would a PR interval on an ECG vary at times or is this a technical issue with the recording and measurement?

Submitted by: L. Grbac, MD, Etobicoke, Ontario

The PR interval on a resting ECG extends from the onset of the P wave to the onset of the QRS complex and measures 120 ms to 200 ms. This interval is best determined in the leads with the shortest PR interval (on a 12 lead resting ECG). The reasons for small differences in the PR interval in the different leads on the routine surface ECG are related to the differences in the appearance of electrical activity in specific ECG leads and lead position (not specifically related to variation in the PR interval). When analyzing multiple QRS complexes in a single lead on the ECG, there is some evidence that respiration may induce variability in the PR interval. However, this effect is usually not easily measured, requires more investigation and is likely not clinically significant.

Answered by: Dr. Richard Sheppard

27. Narrowband vs. Broadband UVB

Could you comment on the advantages of narrowband UVB over broadband UVB and PUVA.

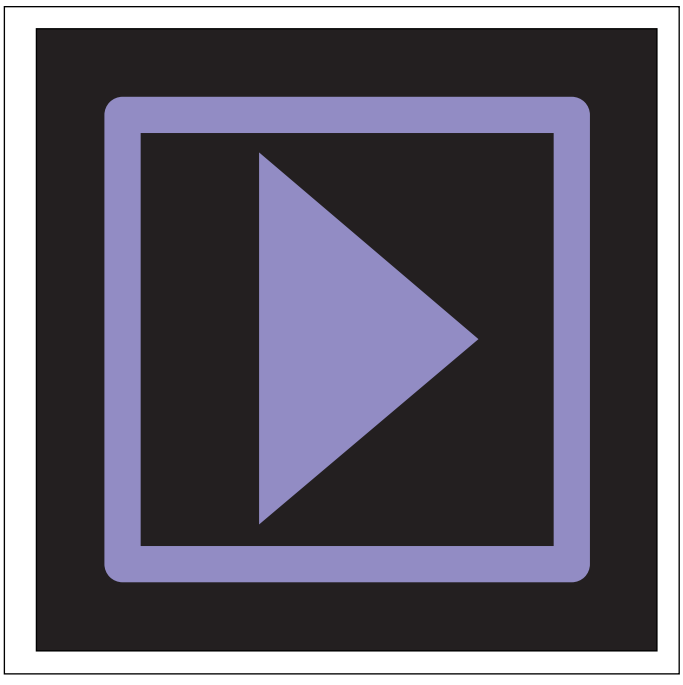
Submitted by: Bernard Seguin, MD, Ottawa, Ontario

Broadband UVB (bUVB) uses wavelengths from 280 nm to 320 nm to treat various dermatoses, especially psoriasis. Erythema (sunburn) primarily occurs from lower wavelengths (< 305 nm). It is also known that the most therapeutic wavelengths for psoriasis are between 296 nm and 313 nm. Therefore, narrowband UVB (nUVB) bulbs were developed which primarily emit at 311 nm. The theory was that nUVB would maximize the efficacy in psoriasis while minimizing the risk of sunburn which can limit therapy with bUVB. This has been shown to be the case and is the major advantage of nUVB.

nUVB has also been shown to be effective for treating vitiligo and atopic dermatitis. Several clinical trials in psoriasis have shown it to be more effective than bUVB although the difference in treatment response was small. The relative risk of nUVB compared to broadband remains uncertain as follow-up studies of nUVB are of shorter duration.

PUVA (Psoralen plus UVA), especially with oral psoralens, may cause nausea, requires eye protection after treatment, cannot be used during pregnancy and is contraindicated in patients with significant hepatic impairment. As nUVB and bUVB do not produce these side-effects, these treatments are preferable for many patients. The most significant risk with PUVA is the potential to cause non-melanoma and melanoma skin cancer after 160 to 200 lifetime treatments and the skin cancer risk with PUVA definitely exceeds the risk of a comparable number of bUVB and nUVB treatments. However, a randomized double-blind controlled comparison of PUVA and nUVB in chronic plaque psoriasis showed PUVA to achieve clearance in more patients with fewer treatments and resulted in longer remissions suggesting that despite the increased risks, there is still a role for PUVA in treating psoriasis.

Answered by: Dr. Richard Haber



28. Follow-Up for Eosinophilic Esophagitis

What regular follow-up should someone with eosinophilic esophagitis have (long-term)?

Submitted by: J. Molson, MD, Kingston, Ontario

Eosinophilic esophagitis (EE) is a disease of the esophagus that causes the patient to complain primarily of dysphagia and food impaction. It is characterized by eosinophilia in the esophagus mucosa often accompanied by eosinophilic microabcesses. Unfortunately, even with increasing incidence of children and adults diagnosed with EE, there is a lack of controlled trials to guide management.

EE is a chronic disease that often has persistent or relapsing symptoms. Treatment is with a topical steroid. Topical steroids are administered twice to four times a day (swallowed and not inhaled) for a period of six to eight weeks. Unfortunately, recurrence is common after discontinuation of treatment and maintenance therapy should be considered.

Optimal strategies for follow-up have not been established. It is recommended by an expert panel to have regular clinic visits to establish response and side-effects to therapy. There are no guidelines for repeat upper endoscopies to evaluate for disease progression.

Resource
1. Furuta GT, Liacouras CA, Collins MH, et al: Eosinophilic Esophagitis in Children and Adults: A Systematic Review and Consensus Recommendations for Diagnosis and Treatment. Gastroenterology 2007; 133(4):1342-63.

Answered by: Dr. Richmond Sy

29. New Prescription Options for Morbid Obesity

What are the new prescription options for morbid obesity?

Submitted by: Bradley Atkinson, MD, Sheet Harbour, Nova Scotia

Medications for the treatment of obesity usually can decrease weight by about 5% to 10% in those that respond. Often there is weight regain if medications are discontinued. Two medications that are currently available in Canada are orlistat and sibutramine. Both should be considered as an adjunct to lifestyle modifications. Bariatric surgery can produce greater weight loss and there are a number of surgical options. Other medications are being developed but are not yet available in Canada.

Answered by: Dr. Vincent Woo

30. Diastolic Dysfunction

What is the diagnosis and treatment of diastolic dysfunction?

Submitted by: Kelly Jones, MD, St. Thomas, Ontario

Diastolic dysfunction means that the heart cannot fill at a normal pressure because of impaired left ventricular relaxation (from aging, ischemia, hypertension), increased myocardial stiffness (from left ventricular hypertrophy, fibrosis or an infiltrative disorder), or an external constraint to ventricular expansion such as constrictive pericarditis. The diagnosis of diastolic heart failure is made when the patient has evidence of elevated filling pressures (high jugular venous pressure, peripheral edema or pulmonary edema) and left ventricular (LV) systolic function is normal or only mildly reduced (*i.e.*, LV ejection fraction is > 50%). It is not possible to distinguish systolic heart failure from diastolic heart failure based on physical examination alone.

The best test to assess diastolic function is an ECHO. The hallmark of significant diastolic dysfunction is left atrial enlargement as assessed by the left atrial volume indexed to body surface area > 30 mL/m^2. In addition, velocity of blood flow through the mitral valve, the pulmonary veins and the velocity of the mitral annulus provide valuable information about LV diastolic pressure. The severity of diastolic dysfunction is graded as impaired relaxation, pseudonormal or restrictive as the LV diastolic pressure becomes progressively higher. The typical patient with diastolic heart failure is an elderly woman with hypertension, diabetes and renal failure dysfunction. Atrial fibrillation secondary to atrial dilatation is common in patients with diastolic heart failure.

There is no specific therapy that decreases mortality in patients with diastolic heart failure, unlike ACE inhibitors and ß-blockers that prolong life in patients with systolic heart failure. Diuretics should be used as necessary to control fluid retention. Hypertension should be controlled and ischemia should be treated medically or with revascularization. The prognosis of diastolic heart failure is similar to that of systolic heart failure.

Resource

1. Owan TE, Hodge DO, Herges RM, et al: Trends in Prevalence and Outcomes of Heart Failure with Preserved Ejection Fraction. N Engl J Med 2006; 355(3):251-9.

Answered by: Dr. Bibiana Cujec

31. The Role of Spirometry in COPD

What is the role of spirometry in the setting of presumed COPD?

Submitted by: Len Grbac, MD, Etobicoke, Ontario

Spirometry is used to confirm the diagnosis of presumed COPD. COPD should be suspected clinically when an individual, typically > 40-years-of-age, with adequate exposure history to inhaled noxious substances (*e.g.*, smoking cigarettes), presents with respiratory symptoms such as chronic cough, chronic sputum production, exertional dyspnea, wheeze, or frequent respiratory tract infections.[1] In the setting of confirmed COPD, spirometry is useful to determine the severity of airflow obstruction. For example, individuals with severe airflow obstruction (*i.e.*, reduced ratio between forced expired volume in one second [FEV1] and forced vital capacity with an FEV1 < 50% predicted) have a poor prognosis and are at increased risk for chronic respiratory failure.[1]

Reference
1. O'Donnell D, Hernandez P, Kaplan A, et al: Canadian Thoracic Society Recommendations for Management of Chronic Obstructive Pulmonary Disease—2008 Update for Primary Care. Can Respir J 2008; 15(Suppl A):1A-8A.

Answered by: Dr. Paul Hernandez

32. Using Calcipotriol on the Face

Can calcipotriol be used safely on the face? How is it best to treat facial psoriasis?

Submitted by: Alok Sood, MD, Toronto, Ontario

Calcipotriol cream is a synthetic 1,25-dihydroxyvitamin D analog indicated for treating psoriasis. It acts on vitamin D response elements in the nucleus, affecting gene expression and, relevant to psoriasis, results in reduced keratinocytes proliferation and inflammation. Although it is rapidly metabolized at site of application with minimal systemic absorption, if applying large quantities (> 100 g per week), patients should be monitored for hypercalcemia.

Its main side-effect is lesional or perilesional irritation, burning/itching and irritant dermatitis affecting 5% to 10% of patients. Allergic contact dermatitis is very rare.

Since the skin on the face is thinner than other areas (trunk, palms/soles), it may be more susceptible to irritation. In open and uncontrolled studies, topical calcipotriol with application twice daily for six weeks has been shown to be effective and safe in treating psoriasis of the face and intertriginous areas.[1,2]

Facial psoriasis readily responds to mild topical corticosteroids. Lowest potency corticosteroids (*e.g.*, 1% to 2.5% hydrocortisone and hydrocortisone 17-valerate) are used twice daily. Even with low-potency steroids, side-effects such as atrophy, telangiectasias and steroid-acne can still occur. Topical calcipotriol is an effective non-corticosteroid alternative for facial psoriasis, with twice daily application being more effective than once daily. Dx

References
1. Kienbaum S, Lehmann P, Ruzicka T: Topical Calcipotriol in the Treatment of Intertriginous Psoriasis. Br J Dermatol 1996; 135(4):647-50.
2. Ortonne JP, Humbert P, Nicolas JF, et al: Intra-Individual Comparison of the Cutaneous Safety and Efficacy of Calcitriol 3 Microg g(-1) Ointment and Calcipotriol 50 Microg g(-1) Ointment on Chronic Plaque Psoriasis Localized in Facial, Hairline, Retroauricular or Flexural Areas. Br J Dermatol 2003; 148(2):326-33.

Answered by: Dr. Charles Lynde; and Dr. John Kraft