Answers to your questions from our medical experts

1. Giant Cell Tumours and Osteosarcoma

What is the relationship, if any, between giant cell tumours (bone) and osteosarcoma?

Submitted by: Katherine Allen, MD, Belleville, Ontario

While both are classified as sarcomas of bone, these are two distinct clinical and pathological entities. Osteosarcoma is a high-grade, malignant spindle cell tumour that arises within a bone. It is associated with metastatic potential and is characterized by production of tumour osteoid directly from a malignant spindle cell stroma. However, giant cell tumours of the bone consist of multinucleated giant cells interspersed within the spindle cell stroma and are of unknown origin. These are more commonly benign at presentation but are at risk for *de novo* malignant presentation or transformation. Recurrence is typically local; giant cell tumours have a low metastatic potential.

Answered by: Dr. Sharlene Gill

2. Black, Hairy Tongue

What causes black, hairy tongue? What is the significance and treatment?

Submitted by: A. S. MacCara, MD, Pictou, Nova Scotia

Black, hairy tongue is a benign, common condition affecting up to 5% of the population. Keratin builds up on filiform papillae on the dorsum of the tongue. Clinically, there is diffuse thickening and lengthening of the papillae, giving a hair-like appearance. Colours range from black to brown/yellow. Patients may complain of bad breath, or a foul taste in the mouth.

Although its etiology is generally unknown, it is not caused by underlying systemic disease or infection. Aggravating or causative factors may include:

- smoking,
- hot beverages (*e.g.*, coffee, tea),
- mouthwash,
- poor oral hygiene,
- soft diet (excess keratin less likely to be removed by food) and
- antibiotic therapy (causes changes in bacterial flora with overgrowth of pigment-producing bacteria).

Patients should be reassured that the condition is benign and no treatment is needed. They should avoid exacerbating factors, such as smoking and consider increasing firm foods in the diet. The best treatment is to brush the tongue gently when brushing teeth and/or scrape the affected area with a tongue scraper. The tongue should be swabbed to rule out accompanying candidiasis and treated if needed, especially if the patient complains of a burning sensation in the tongue.

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

3. Topical vs. Oral NSAIDs

Is there a difference in efficacy in the use of topical NSAIDs vs. oral NSAIDs? When do you use them?

Submitted by: Monique Bourbeau, MD, Longueuil, Quebec

Topical NSAIDs are touted as being equivalent to oral NSAIDs but with fewer side-effects. However, there is little data to suggest this is true. Topical diclofenac cream, has been shown to be more effective than placebo in reducing pain in patients with osteoarthritis (OA) of the knee, as was illustrated in a study that randomly assigned 103 patients to a diclofenac or a placebo-containing skin patch. Self-reported knee pain was significantly decreased in the group receiving diclofenac than the placebo group (from a mean pain score of 5.7 to approximately 2.0 and 4.0, respectively).[1] Diclofenac in dimethylsulfoxide has also been found to have similar results to diclofenac cream.

The efficacy of topical NSAIDs appears to be of relatively short duration and not as potent as oral NSAIDs.

The efficacy of topical NSAIDs appears to be of relatively short duration and not as potent as oral NSAIDs. A 2004 meta-analysis including 13 trials, involving almost 2,000 patients who were randomly assigned to treatment with a topical NSAID, oral NSAID, or placebo showed evidence of significant short-term (one to two weeks) efficacy for pain relief and functional improvement when topical NSAIDs were compared to placebo. Unfortunately, the effect was not apparent at three to four weeks. Topical NSAIDs were generally inferior to oral NSAIDs, although the topical route was safer than oral use.[2]

Though topical NSAIDs can be used, they are not as effective as oral NSAIDs and have a limited role in the setting of multiple affected joints. In the setting of OA, they can be tried, particularly if there are contraindications to oral NSAIDs.

References
1. Bruhlmann P, Michel BA: Topical Diclofenac Patch in Patients with Knee Osteoarthritis: A Randomized, Double-Blind, Controlled Clinical Trial. Clin Exp Rheumatol 2003; 21(2):193-8.
2. Lin J, Zhang W, Jones A, et al: Efficacy of Topical Non-Steroidal Anti-Inflammatory Drugs in the Treatment of Osteoarthritis: Meta-Analysis of Randomised Controlled Trials. BMJ 2004; 329(7461):324.

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

4. Cough due to *Bordetella Pertussis*

How do you confirm that cough is due to *Bordetella pertussis (B. pertussis)*? How is it treated?

Submitted by: Pooi-Lin Tham, MD, London, Ontario

B. pertussis is a pleomorphic, gram-negative, coccobacillus well recognized to cause a severe cough syndrome in adults and adolescents. *B. pertussis* is highly contagious when inhaled in aerosol droplets. Vaccinations against the organism have been used for decades in Canada but immunity is often incomplete. Clinically, following an incubation period or one to three weeks, a two-week catarrhal phase occurs with symptoms typical of a viral upper respiratory tract infection. This is followed by a paroxysmal phase characterized by bouts of severe cough associated with a "whooping" sound, with or without post-tussive vomiting. Cough typically persists for four to six weeks but can last much longer.

Confirmation of *B. pertussis* as the cause of chronic cough requires laboratory testing by culture from nasopharyngeal secretions. Serologic tests are also available in some centers, but are impractical in most clinical cases as they require acute and convalescent serum samples taken two weeks apart.

Treatment of suspected cases with a macrolide for two weeks is recommended. Early treatment during the catarrhal phase will reduce the likelihood of severe cough later. There is limited benefit if antibiotics are given during the paroxysmal phase. Patients should be placed on respiratory isolation at home until five days after antibiotics are started. There is no proven benefit for the use of ß-agonists or corticosteroids.

Resource
1. Braman SS: Postinfectious Cough. ACCP Evidence-Based Clinical Practice Guidelines. CHEST 2006; 129(1 Suppl):138S-146S.

Answered by: Dr. Paul Hernandez

5. Developing Gynecomastia

Do patients with high levels of prolactin develop gynecomastia?

Submitted by: J. Hurst, MD, Vancouver, British Columbia

Men with hyperprolactinemia may develop gynecomastia as elevated prolactin levels are associated with decreased testosterone levels.

Answered by: Dr. Vincent Woo

6. Hypnosis as a Medical Therapeutic Agent

What is the role of hypnosis as a medical therapeutic agent?

Submitted by: Barry Clark, MD, Charlottetown, Prince Edward Island

In medicine, hypnosis is becoming a more accepted modality to help patients with symptom control for:

- pain,
- nausea and vomiting,
- itching,
- impotence,
- contractures of the hand,
- migraine and tension headaches,
- enuresis and
- smoking.

It is particularly helpful for patients who describe their anxiety in physical terms, such as palpitations, GI discomfort, chest pain, sweating and motor restlessness. Hypnosis can be a helpful adjunctive tool for treating anxiety disorders because of its ability to help patients control their physical reaction to anxiety-provoking stimuli, thereby dissociating somatic response from psychological distress.

However, the best-established therapeutic effect of hypnosis is analgesia. Hypnosis seems to work through three primary mechanisms:

- muscle relaxation,
- perceptual alteration and
- cognitive distraction.

Pain is often accompanied by reactive muscle tension. Patients frequently splint the part of their body that hurts. Yet, because muscle tension can, by itself, cause pain in normal tissue and because traction on a painful part of the body can generate more pain, techniques that induce greater physical relaxation can reduce pain in the body.

In medicine, hypnosis is becoming a more accepted modality to help patients with symptom control.

The second major component of hypnotic analgesia is perceptual alteration. Patients can be taught to imagine that the affected body part is numb. More commonly, subjects can substitute a different sensation for the painful one. Temperature metaphors are often especially useful, which is not surprising given the fact that pain and temperature sensations are part of the same sensory system, the lateral spinothalamic tract. Thus, imagining that an affected body part is cooler using an image of dipping it in ice water, often helps patients transform pain signals.

Finally, cognitive distraction helps patients focus on competing sensations in another part of the body. Since painful stimuli tend to attract, indeed coerce, attention to them, patients are encouraged to acknowledge the pain, while at the same time, maintaining focus on sensations in other parts of their bodies.

Answered by: Dr. Hany Bissada

7. Treating Bacterial Vaginosis in Early Pregnancy

What is the benefit, if any, of treating bacterial vaginosis in early pregnancy?

Submitted by: Danaze G. Chambers, MD, Banff, Alberta

According to the Cochrane review and the US Preventive Services Task Force, there is good evidence that screening and the treatment of asymptomatic bacterial vaginosis (BV) in pregnancy does not improve outcomes, such as preterm birth and its consequences. There are good-quality studies with conflicting results that screening and treating asymptomatic BV in high-risk pregnant women (previous preterm labour or preterm prolonged rupture of membranes) is effective. The magnitude of benefit exceeded risk in several studies, but the single largest study reported no benefit among high-risk pregnant women.

Resources
1. McDonald HM, Brocklehurst P, Gordon A: Antibiotics for Treating Bacterial Vaginosis in Pregnancy. Cochrane Database Syst Rev 2007; (1):CD000262.
2. US Preventive Services Task Force: Screening for Bacterial Vaginosis: Recommendations and Rationale. Am J Prev Med 2001; 20(3 Suppl):59-61.

Answered by: Dr. Victoria Davis

8. Taking Patients Off BP Medication

When treating someone for hypertension and the patient has made the necessary lifestyle changes (decrease weight, quit smoking, *etc.*) at what point should I take them off BP medication?

Submitted by: Heather Dixon, MD, Kitchener, Ontario

As the Canadian Hypertension Education Program (CHEP) recommendations have repeatedly highlighted, the average hypertensive patient requires between two and three medications in order to control BP to currently recommended target values. The CHEP also highlights the beneficial effect of lifestyle modification (*e.g.,* weight loss, regular exercise, salt intake reduction and smoking cessation, as well as alcohol restriction) on BP and suggests that the successful long-term implementation of such changes may even lead to a reduction in the need for pharmacologic therapy.

Accordingly, all hypertensive patients are encouraged to adhere to these lifestyle approaches in order to reduce or, very infrequently in my experience, obviate completely the need for antihypertensive medications. It is most important to remember that hypertension is a lifelong risk factor and that, while significantly reducing the risk of stroke and heart attack, effective BP treatment to target levels will lower, but not completely eliminate the contribution of hypertension to an individual's global CVD risk.

Answered by: Dr. George N. Honos

9. Immunizing Patients Who Have Splenectomies

What is the best immunization protocol for patients who have splenectomies?

Submitted by: Douglas Drover, MD, St. John's, Newfoundland

Asplenia or hyposplenism may result from surgery, a congenital or functional abnormality. Functional hyposplenism may be due to conditions, such as sickle cell anemia and thalassemia major. There are no contraindications to the use of any vaccine for patients with known functional or anatomical hyposplenism. Vaccination should be undertaken to protect the patient against encapsulated bacteria (*Streptococcus pneumoniae*, *Hemophilus influenza* Type B *Neisseria meningitidis*) to which these patients are susceptible. They should all also receive yearly influenza vaccinations.

Prior to a planned splenectomy, immunization status should be reviewed to ensure that any pending immunization can be delivered at least two weeks before splenectomy; emergent splenectomy vaccine should be given two weeks after splenectomy. If concern is raised that the patient may not return for a follow-up appointment, the vaccinations can be given prior to discharge.

Resource
1. Public Health Agency of Canada. *Canadian Immunization Guide 2006*. Seventh Edition. Public Health Agency of Canada Under the Authority of Public Works and Government Services Canada, 2007, pp. 119-121.

Answered by: Dr. John M. Embil

10. Risk of Developing Colorectal Cancer

A newly-diagnosed patient with ulcerative colitis (UC) wants to know his risk of developing bowel cancer in 10 years. Should he have yearly colonoscopies?

Submitted by: Paul Stephan, MD, Scarborough, Ontario

Patients with UC have an increased risk of colorectal cancer. The risk increases with the duration of disease, the extent, the presence of primary sclerosing cholangitis and family history of colon cancer, a younger age of onset of disease and the likely severity of the disease. The incidence of colorectal cancer is dependent on extent and duration of disease with estimates of colon cancer rates of 2% at 10 years, 8% at 20 years and 18% at 30 years of disease.[1] In general, the risk of colon cancer increases 0.5% to 1.0% per year after eight to 10 years of disease.

The recommendation is to perform annual or biannual colonoscopy with extensive biopsies (four biopsies every 10 cm of colon) in patients after eight to 10 years with pancolitis or after 12 to 15 years of the disease with left-sided UC. Patients with ulcerative proctitis are not found to have an increased risk for colorectal cancer and do not have to enter a surveillance program. The aim of surveillance is to detect any level of dysplasia and to recommend colectomy if this is found.

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

Answered by: Dr. Richmond Sy

11. Meniere's Disease

What is the latest research/information on the treatment of Meniere's disease?

Submitted by: William G. Caughey, MD, Bracebridge, Ontario

Meniere's disease is probably an imbalance between secretion and absorption of endolymphatic fluid within the membranous labyrinth of the inner ear. The theories of pathogenesis include infection, trauma, allergy and autoimmune mechanisms possibly affecting the function of the endolymphatic system. However, the cause of sudden attacks of vertigo and aural symptoms in Meniere's disease still remains unknown.

Given the unpredictable natural history of Meniere's disease, the treatment of this condition remains empirical. Historically, diet modification with salt restriction to < 2 g q.d. and avoidance of certain foods, including caffeinated beverages, alcohol and chocolate, were recommended as an initial management. Medical treatment commonly includes diuretics, betahistine and vestibular suppressants. However, the Cochrane review of controlled clinical trials failed to demonstrate sufficient evidence of the benefit of common medical treatments currently used for Meniere's disease. There are positive reports of systemic steroids and antiviral medications on vestibular symptoms, but there are no randomized controlled trials to support the results of these studies.

The surgical treatment of persistent and debilitating Meniere's disease not responding to medical management includes those procedures that destroy the labyrinthine function and those that preserve function. The conservative procedure of intra-tympanic gentamicin instillation ("chemical labyrinthectomy") has proven effective in controlling vertiginous episodes; however, this treatment carries a significant risk of hearing loss. The effectiveness of this treatment modality remains inconclusive. Anecdotal reports of possible positive effects of low-pulse pressure, ultrasound, lasers and cryosurgery have also been published, but evidence to support their use is insufficient.

Endolymphatic sac decompression and vestibular nerve section techniques have been described and there are reports of variable success rates. Surgical labyrinthectomy is considered a definitive treatment for incapacitating vestibular symptoms but inevitably causes a complete loss of vestibular and cochlear function on the operated side. These effects might be devastating in cases of bilateral Meniere's disease. Therefore, surgery that does not preserve labyrinthine function is limited to unilateral cases only.

In conclusion, numerous therapeutic options are available for the management of Meniere's disease. Conservative non-surgical options are a good starting point for treatment but are limited by proven efficacy. Surgical treatments are beneficial but one must weigh the benefits (*i.e.*, relief of disabling symptoms) vs. the long-term side-effects of surgical treatment.

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

12. *Lactobactillus* in a Urine Culture

Is there anything significant about a urine culture with *Lactobactillus* reported in a symptomatic female patient?

Submitted by: Steven Goluboff, MD, Saskatoon, Saskatchewan

Lactobacilli are common commensal bacteria found in the perineum and vagina along with *Corynebacterium*, diptheroids and *Staphylococcus albus*. They act as a major host defense mechanism against urinary tract infection by maintaining an acidic environment, producing hydrogen perioxide and interfering with pathogenic bacterial adherence. *Lactobacilli* are not pathogenic organisms and their presence in a urine culture can be found in normal, non-infected individuals.

Answered by: Dr. Manish M. Sood

13. Right Bundle Branch Block

A 70-year-old woman presents with weakness. Her EKG shows a right bundle branch block (RBBB). She is hypertensive. Are there any antihypertensive drugs that we should avoid in RBBB? Are any further investigations required?

Submitted by: Shanti Rao, MD, Windsor, Ontario

RBBB increases in prevalence with age. It occurs in < 1% of people < 50-years-of-age and up to 11% of people > 80-years-of-age. It is at times associated with structural heart disease (coronary heart disease [CAD], cor pulmonale, hypertension, cardiomyopathy) and can also be found in patients with a structurally normal heart. RBBB can be iatrogenic following septal myectomy (for hypertrophic cardiomyopathy) or surgery for tetralogy of Fallot and other congenital heart disease. No investigations are routinely indicated. Prognosis depends on whether there is associated ventricular dysfunction or CAD.

Choice of antihypertensive therapy should not be influenced by the presence of a RBBB. If there is an associated prolonged first-degree atrioventricular (AV) block (*i.e.*, PR interval > 0.28 seconds), one should use a ß-blocker or non-dihydropyridine calcium channel blocker (CCB) (*i.e.*, verapamil or diltiazem) with caution (or avoid altogether) as these drugs could result in further delay in AV node conduction with the development of second- or third-degree AV block. In a 70-year-old woman with hypertension, a thiazide diuretic, dihydropyridine CCB (*e.g.*, amlodipine or feldipine) and/or ARB/ACE inhibitor would be appropriate first-line therapy. Weakness cannot be attributed to the RBBB.

Answered by: Dr. Bibiana Cujec

14. Commonality of True ASA Allergy

How common or uncommon is an allergy to ASA (true allergy)?

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

ASA is second to the penicillins as a cause for adverse drug reactions. Almost all of these reactions are mediated through the pharmacologic properties of ASA (COX-1 inhibition). The three most common syndromes which occur within several hours of ASA ingestion include:

- ASA-sensitive asthma/rhinitis,
- urticaria/angioedema and
- the anaphylaxic/anaphylactoid syndromes.

The prevalence of ASA-induced asthma among asthmatics is much less than 10%, although the percentage is higher in the subpopulation of asthmatics afflicted with nasal polyps and sinusitis. Most of the urticaria syndromes are not IgE-mediated, although rarely have ASA-derived haptens been associated with IgE-mediated responses.

Finally, anaphylactoid and anaphylactic syndromes (which likely constitute the "true allergic patients" in your question) are clinically indistinguishable, but these latter patients can be challenged with structurally different NSAIDs without untoward effects. In general, a history of crossreactivity among multiple NSAIDs implies a non-IgE-mediated process. Similarly, a history of monosensitivity to one NSAID implies an IgE-mediated process, although specific antibodies are often elusive.

The incidence of anaphylactoid/anaphylactic reactions is not known, but women appear to be at higher risk. One report cited anaphylaxis related to ASA usage in 27 of 266 patients brought to the ER.[1] Specific IgE likely plays a role in many of these reactions, but often, the exact mechanism for mast cell/basophil discharge is unidentified.

Reference

1. Kemp SF, Lockey RF, Wolf BL, et al: Anaphylaxis: A Review of 266 Cases. Arch Intern Med 1995; 155(16):1749-54.

Resources

1. Kong JS, Teuber SS, Gershwin ME: Aspirin and Nonsteroidal Anti-Inflammatory Drug Hypersensitivity. Clin Rev Allergy Immunol 2007; 32(1):97-110.
2. Stevenson DD: Aspirin and NSAID Sensitivity. Immunol Allergy Clin North Am 2004; 24(3):491-505.

Answered by: Dr. Tom Gerstner

Anaphylactoid and anaphylactic syndromes are clinically indistinguishable, but these patients can be challenged with structurally different NSAIDs without untoward effects.

15. Pityriasis Alba vs. Rosacea

What is a short way to describe and contrast pityriasis alba vs. rosacea?

Submitted by: Sandra Hirowatari, MD, Langley, British Columbia

Pityriasis alba is an idiopathic condition that presents with hypopigmented patches often with superimposed scaling, most commonly seen on the face and extremities of children.

It represents a mild dermatitis with post-inflammatory hypopigmentation and can occur in patients with atopic dermatitis.

Pityriasis alba is really not in the differential diagnosis of rosacea which presents as an erythemato-telangiectic type or papulo-pustular type or both. These conditions are not normally confused.

The major differential diagnoses of pityriasis alba are pityriasis versicolor and vitiligo.

Pityriasis versicolor is uncommon on the face, where most pityriasis alba is seen and the macules and patches are more sharply demarcated and coalescent than pityriasis alba.

Vitiligo is depigmented rather than hypopigmented.

If in doubt, a fungal scraping for potassium hydroxide will be positive in pityriasis versicolor and negative in pityriasis alba. Vitiligo is usually easily distinguished from pityriasis alba by examining the patient with a Wood's light.

Answered by: Dr. Richard Haber

16. Ordering PSA

How do you justify ordering a PSA test more frequently than indicated if a patient comes asking for it to be done again?

Submitted by: Dan Berendt, MD, Edmonton, Alberta

PSA testing is controversial. Most urologists recommend yearly PSA testing with digital rectal examination. If a PSA rise seems to have been caused by a urinary tract infection, a urological manipulation, or by sexual intercourse for example, it can be justified to repeat it and see if it has returned to normal values. Another reason to ask for more PSA testing would be an elevated PSA with negative prostate biopsies. By measuring PSA velocity, the clinician can decide whether it is indicated or not to perform other sets of biopsies. Finally, a patient with known prostate cancer will be followed with more frequent PSA testing.

Answered by: Dr. Hugues Widmer

17. Persistent, Foul Vaginal Odour

How to manage the woman with a persistent foul odour from her vagina?

Submitted by: Yasmin Shaikh, MD, North York, Ontario

There is little helpful information in the standard literature on management of vaginal odour alone. Most information describes the treatment of infectious vaginitis or vaginosis. To eliminate a specific cause of vaginal odour, a complete examination and investigation must exclude:

- genital and urinary infections,
- surface lesions of the genital tract,
- foreign bodies,
- estrogen deficiency,
- incontinence,
- urine odour and
- rectovaginal or bladder fistula.

All of these must be considered and appropriately managed.

The most common cause of odour is bacterial vaginosis (BV). Diagnosis may be made in the clinic by detecting three or more of the following on examination:

- homogeneous adherent discharge,
- vaginal fluid pH > 4.5,
- amine odour and
- clue cells.

A diagnosis may also be made by detecting the replacement of *lactobacilli* by a mixed, presumably anaerobic, flora on a Gram stain of vaginal fluid. Treatment may need to be repeated.

There are a number of other factors to consider. Poor hygiene may be an issue. Cleaning the vulva with gentle soaps, avoiding irritative chemicals in laundry, toilet paper, towels, douches, deodorants and using white cotton underwear can help. Excessive inguinal sweating (and hyperhidrosis in other areas) can be controlled for up to six months by intradermal injections of botulinum toxin. Post coital odour can be reduced by using latex condoms. In some situations, odour may be considered "normal."

Finally, there is ongoing research into the use of a specific stainless steel douching system which has been reported in a pilot study to reduce odour. The title of the project is "Efficacy of (WaterWorks®) Douching Device for Elimination of Perceived Vaginal Odour Not Caused by BV or Vaginitis." There are no Canadian sites listed but it may be worthwhile contacting the authors of the research study to see if your patient might qualify. The website to visit is http://clinicaltrials.gov/ct2/show/NCT00417365?cond=%22Vaginal+Diseases%22&rank=45 and the investigators are Ashwin Chatwani, MD, Temple University and Jack Sobel, MD, of Wayne State University.

Resource

1. Chatwani AJ, Hassan S, Rahimi S, et al: Douching With Water Works Device for Perceived Vaginal Odor With or Without Complaints of Discharge in Women With No Infectious Cause of Vaginitis: A Pilot Study. Infect Dis Obstet Gynecol 2006; 2006: 95618.

Answered by: Dr. David Cumming

18. Screening for Bladder Cancer

Is there any literature for screening in bladder cancer?

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

In order to be effective, a screening test must be simple to perform, acceptable to providers and recipients, safe, reasonably pain-free, low-cost and a valid estimator of the true disease state. Bladder cancer is a cancer predominantly affecting older men and has been associated with multiple occupational and environmental risk factors.

Presently, there is no direct evidence to support morbidity or mortality benefits of screening for bladder cancer; therefore, routine screening of the general population by urine cytology or evaluation for microscopic hematuria is not recommended. The screening of high-risk groups including workers exposed to industrial toxins and patients who have a history of bladder cancer by urine cytology may be a consideration, but again, there is insufficient evidence for or against screening even in high-risk groups.

Answered by: Dr. Sharlene Gill

19. Calcium Supplementation Options

What different calcium products can be used for osteoporosis? My patient gets headaches with calcium carbonate and calcium citrate.

Submitted by: M. Rajani, MD, Toronto, Ontario

Headaches are a rare but previously described side-effect with calcium supplementation. Unfortunately, the source of the headache, in most cases, is the calcium and not the salt that is absorbed with it. There are many preparations of calcium available on the market; however, the most easily absorbed ones are calcium carbonate and citrate. Calcium gluconate and lactate are available but their absorption is poor and, if used, they must be taken with food. The other option is natural dietary supplementation and increasing the amount of calcium-rich foods in the diet.

In the setting of a headache with calcium supplementation, it would be a good idea to make sure other electrolytes, such as potassium, magnesium and phosphate are normal. A history of headaches with calcium-rich foods would also be important to obtain.

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

20. Using Insulin Glargine in an Adolescent

Can I use insulin glargine in a 15-year-old boy who weighs 68 kg (adult size)?

Submitted by: Renee D'Amours, MD, Matane, Quebec

The long-acting insulins, glargine and detemir have been studied in Type 1 diabetic children and have shown to be efficacious in improving:

- fasting glucose levels,
- decreasing A1C levels and
- reducing overnight hypoglycemia.

Long-acting insulins, have been studied in Type 1 diabetic children and have shown to be efficacious.

Answered by: Dr. Vincent Woo

21. Allergies to Antihypertensive Medication

Which antihypertensive drug would you give a patient with kidney disease who is allergic to ACE inhibitors and ARBs?

Submitted by: John Walton, MD, Castlegar, British Columbia

Inhibition of the renin-angiotensin-aldosterone system is most effective at decreasing proteinuria and slowing the progression of chronic renal insufficiency in patients with diabetic and non-diabetic nephropathy. A patient with kidney disease who is allergic to ACE inhibitors and ARBs can be treated with a loop diuretic (furosemide) and a calcium channel blocker (CCB) or a ß-blocker for the control of hypertension (target BP is < 130/80 mmHg). Diuretics are effective at controlling the fluid overload that is common in patients with renal failure. A ß-blocker is indicated primarily if there is left ventricular systolic dysfunction or coronary artery disease. The non-dihydropyridine CCBs (*i.e.*, diltiazem and verapamil) decrease proteinuria and are preferred over the dihydropyridine CCBs (amlodipine and long-acting nifedipine) which are very good at lowering BP but do not have the same beneficial effect in decreasing proteinuria. The best renal outcomes are associated with drugs that lower BP as well as the degree of proteinuria. A note of caution: one should use a ß-blocker and diltiazem or verapamil combination cautiously because of the significant sinus bradycardia and heart block which can ensue. Heart rate should be monitored and doses adjusted or one of the drugs discontinued if the resting heart rate is < 50 bpm. If there is a good indication for a ß-blocker, a better addition would be amlodipine or long-acting nifedipine for BP control.

Answered by: Dr. Bibiana Cujec

22. Naltrexone for Alcoholic Patients

For which alcoholic patients should naltrexone be considered?

Submitted by: Graeme Magor, MD, Kitchener, Ontario

Naltrexone, an opioid antagonist, has demonstrated efficacy in preventing relapse in recently-detoxified patients with alcohol dependence. Its use as treatment for alcohol dependence is supported by studies using experimental designs. Preliminary placebo-controlled small studies suggest that greater suppression of drinking results with concurrent treatment with naltrexone and a serotonin reuptake inhibitor. Larger-scale clinical trials are under way to follow-up on these preliminary findings. Also, some research has suggested that a positive family history of alcoholism is a consistent predictor of a good response to naltrexone. Long-term naltrexone treatment (50 mg q.d.) may be helpful in patients who are treated with less intensive counselling.

The effect of naltrexone on acute alcohol withdrawal has not been investigated and the studies demonstrating the efficacy of naltrexone in alcohol dependence required a minimum of seven days of abstinence or medical detoxification from alcohol prior to initiating treatment.

The potential for hepatotoxicity at high doses has been raised as a more serious concern. As a precaution, patients should receive a full battery of liver function tests prior to receiving naltrexone and naltrexone is contraindicated in patients with liver failure or acute hepatitis. The moderate transaminitis often seen in alcohol dependence is not a contraindication; however, baseline bilirubin and serum transaminases and periodic monitoring of transaminases are indicated. As a guideline, liver function tests should be repeated monthly for the first three months and every three to six months thereafter, if there is no evidence of rising enzyme levels. If persistent elevations in liver enzymes occur, naltrexone should be discontinued. The safety and efficacy of combined use of disulfiram and naltrexone are unknown. Given that both medications are potentially hepatotoxic, their concomitant use is not recommended.

Resource

1. Chapter 31.22 Opioid Receptor Agonists: Methadone, Levomethadyl and Buprenorphpine. In: Sadock BJ, Sadock VA (eds.): Kaplan and Sadock's Comprehensive Textbook of Psychiatry. Eighth Edition. Lippincott Williams & Wilkins, Philadelphia, Pennsylvania, 2004.

Answered by: Dr. Hany Bissada

23. Skin Changes With Topical Steroid Use

How long does it take before permanent skin changes occur in people using daily topical steroids (if at all)?

Submitted by: Daniel Berendt, MD, Edmonton, Alberta

There are many potential side-effects from topical corticosteroids, including steroid acne or rosacea, but these are usually reversible when the drug is stopped. More permanent side-effects are atrophy manifesting in its most severe form as striae, as well as telangiectasiae. Mild atrophy is often reversible but striae and telangiectasiae are not.

Permanent side-effects of topical steroid use depend on the:

- duration of treatment,
- method of application (increased with occlusion) and
- site of application (increased in sites of occlusion and penetration, such as axillae and groin areas).

Side-effects are also increased with the potency of the steroid which often depends on its chemical structure (*e.g.*, in general, fluorinated or halogenated topical corticosteroids are more potent but produce more atrophy than non-fluorinated/halogenated topical corticosteroids).

Normally, clinical atrophy does not occur until the topical steroid has been used for three to four weeks and usually reverses completely with time after stopping the steroid. However, with sensitive non-invasive methods, such as ultrasound, dermal atrophy can be documented as early as one week after daily application of various strength topical corticosteroids, including hydrocortisone, but as expected, the amount of atrophy for hydrocortisone is significantly less than for more potent topical corticosteroids, such as clobetasol propionate. Three weeks after the end of application of the steroids, dermal thickness had regained almost its initial value but never completely recovered to the baseline levels.

In practical terms, strong fluorinated/halogenated steroids should be avoided on the face, axillae and groin and prolonged occlusion should also be avoided. Hydrocortisone cream (1%) is safe to use in these areas as even with prolonged use, clinical atrophy would be very unusual. If prolonged treatment is felt to be necessary in these areas, the newer calcineurin inhibitors are very useful as they have not been found to produce atrophy.

Answered by: Dr. Richard Haber

Normally, clinical atrophy does not occur until the topical steroid has been used for three to four weeks and usually reverses completely with time after stopping the steroid.

24. ß-Blockers in Chronic Obstructive Lung Diseases

Regarding the use of ß-blockers in patients with CHF and COPD or asthma, what are some doses, precautions and benefits? In which patients is it safe to start ß-blockers if they have COPD or asthma?

Submitted by: J. F. Izzard, MD, New Brunswick

Chronic obstructive lung diseases (*i.e.*, chronic obstructive pulmonary disease [COPD] and asthma) and congestive heart failure (CHF) are common conditions that frequently coexist. Optimal management of advanced CHF associated with systolic dysfunction includes the use of ß-blockers. A number of studies have demonstrated that even non-selective ß-blockers (*e.g.*, carvedilol) are usually well tolerated in patients with COPD, but not in patients with asthma.[1,2] However, better randomized, controlled trials are required examining the use of ß-blockers in this specific patient population with coexisting CHF and lung disease. In patients with COPD who do not tolerate a non-selective ß-blockers, a trial of a ß1 selective ß-blockers (*e.g.*, bisoprolol) may be warranted. In CHF, the dose of ß-blockers is titrated according to patient tolerance and is usually limited by symptoms related to bradycardia and hypotension rather than to respiratory symptoms, such as wheeze.

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

Answered by: Dr. Paul Hernandez

25. Significance of Adenomyosis in Pelvic Ultrasound

What is the significance of adenomyosis in pelvic ultrasound?

Submitted by: Vincent Poon, MD, North York, Ontario

Adenomyosis, generally considered to be endometriosis in the myometrium, may occur diffusely throughout the myometrium, or infrequently, be localized. It is frequently associated with endometriosis in other sites. Adenomyosis may be associated with various patterns of usually cyclic pain and/or heavy prolonged ovulatory bleeding, probably related to interference with contraction of the myometrium. It has tended to be diagnosed in the fourth and fifth decades of life. An association with infertility may also be considered as studies have demonstrated a presence earlier in reproductive life.

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On pelvic examination, the uterus is usually firm and somewhat enlarged. Before the availability of pelvic ultrasound and MRI, the diagnosis was usually based on histopathology following hysterectomy for symptom relief. The image resolution of both transvaginal ultrasound and MRI is effective for the diagnosis of adenomyosis. In a limited number of well-designed studies, the diagnostic efficiency of MRI and transvaginal ultrasound were almost in line.

Management of adenomyosis is generally problem-based (*i.e.*, management of pain and/or abnormal bleeding through a wide range of medical therapies or surgery). Only anecdotal evidence suggests fertility may be improved by gonadotrophin-releasing hormone (GnRH) analogues when adenomyosis is associated.

However, I assume the question relates to the incidental discovery of adenomyosis in an ultrasound performed for routine or incidental reasons. GnRH analogues and danazol can be used, but are short-term treatments at best and extirpative surgery is inappropriate in an asymptomatic patient with no other reason for a hysterectomy. If the diagnosis is made in an otherwise asymptomatic patient, then watchful waiting is appropriate as there is little malignant potential.

Answered by: Dr. David Cumming

26. Considering Surgery for Stress Incontinence

At what point should a women in her mid-50s with stress incontinence consider surgery (she has already done physiotherapy for this and went through investigations in urology and was seen in consult, but is afraid of surgery as suggested)? Is there anything else to offer her?

Submitted by: Nathalie Leroux, MD, Montreal, Quebec

Kegel exercises and physiotherapy should be the first options in treating stress incontinence. If these treatments fail, then the next step is surgery. Surgeries that are now performed can be done as day surgery procedures with minimal discomfort for patients. The pros and cons should be discussed and if the patient is motivated then surgery can be a very good option with high success rates.

Kegel exercises and physiotherapy should be the first options in treating stress incontinence.

Answered by: Dr. Hugues Widmer

27. Treating Keratosis Pilaris

Is there any great treatment for keratosis pilaris?

Submitted by: Larry Bobyn, MD, Kelowna, British Columbia

Keratosis pilaris is an extremely common, almost "physiological" condition, affecting almost half of the population. It is an autosomal dominant condition and can be associated with atopic dermatitis, as well as ichthyosis vulgaris. It is due to the hyperkeratinization of the hair follicle, producing monomorphic follicular papules with a central keratotic core and rim of erythema. Areas that are classically affected include the lateral aspects of the upper arms and thighs. The cheeks in children can also be affected, sometimes on a background of faint erythema.

There is no cure for keratosis pilaris, but fortunately it tends to resolve with age. Treatment remains symptomatic. Emollients with or without keratolytics are the mainstay of therapy. This approach leads to a softening of the keratotic cores. Examples include:

- ammonium lactate (12% lactic acid) and
- urea-containing moisturizers (and also those containing hydrocortisone).

Topical retinoids can also be helpful if used regularly.

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

28. Renal Effects of Lithium

Please comment on the specific renal effects of lithium. Does it affect creatinine clearance, glomerular filtration rate, tubular function and water excretion? What is the best way to monitor for impending/established renal damage due to lithium?

Submitted by: Declan Boylan, MD, Sudbury, Ontario

The use of lithium to treat and cure ailment has been ongoing for > 150 years. Unfortunately, it can lead to multiple renal and electrolyte complications, including urinary concentrating defects, chronic interstitial nephritis and glomerular disease. The most common renal complication, occurring in 20% of lithium users, is nephrogenic diabetes insipidus due to disruptions in distal tubular function and antidiuretic hormone responsiveness. With prolonged lithium use, decreases in the glomerular filtration rate can occur due to chronic interstitial fibrosis, the mechanism of which is largely unknown. Rare case reports of glomerular disease, specifically nephrotic syndrome, have also been reported.

With lithium therapy, baseline creatinine and urinalysis followed by yearly creatinine measurements are recommended. Polyuria (defined as urine output > 3 L q.d.) due to nephrogenic diabetes insipidous often requires no active treatment as patients compensate by up-regulation in thirst. If polyuria becomes severe or debilitating, administration of thiazide diuretics and/or amiloride has been shown to be effective in reducing urine volume. Careful attention should be paid to increases in lithium levels and toxicity with initiation of diuretic therapy.

Resources
1. Yatham LN, Kennedy SH, O'Donovan C, et al: Canadian Network for Mood and Anxiety Treatments (CANMAT) Guidelines for the Management of Patients with Bipolar Disorder: Consensus and Controversies. Bipolar Disord 2005; 7(Suppl 3):5-69.
2. Timmer RT, Sands JM: Lithium Intoxication. J Am Soc Nephrol 1999; 10(3):666-74.

Answered by: Dr. Manish M. Sood

29. Working-Up Urinary Tract Infections in Males

What is the appropriate work-up of a urinary tract infection in a male?

Submitted by: Katherine Abel, MD, Leduc, Alberta

Urinary tract infections in males are considered complicated infections. Therefore, an investigation should be performed. The basic investigation consists of an abdominal (renal) ultrasound and a cystoscopy. In younger men, otherwise perfectly healthy, first-time infections may be investigated with a uroflow and a residual volume. If the results are abnormal or if a recurrence occurs, then the basic investigation should be done.

Answered by: Dr. Hugues Widmer