Answers to your questions from our medical experts

1. Ruling Out Lactose Intolerance

Is a negative lactose intolerance test sufficient to rule out lactose intolerance?

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

The short answer is no. A lactose tolerance test has a sensitivity of 75% and a specificity of 96%.[1]

Lactose is metabolized in the small intestine by lactase to produce glucose and galactose. The lactose tolerance test is a test of absorption measuring absorbed glucose levels at zero, 60 and 120 minutes. An increase in glucose by > 20 ng/dl along with symptoms, usually pain, bloating and diarrhea, is diagnostic. Diabetes and bacterial overgrowth give false-negative results.

More reliable than the lactose tolerance test is the lactose breath hydrogen test, a test of malabsorption. Ingested lactose, not absorbed by the small bowel, moves along to the colon where bacteria metabolize it to fatty acids and hydrogen gas. The hydrogen is absorbed and easily measured in a breath test.

Breath hydrogen is measured at baseline and at 30 minute intervals for three hours. Breath hydrogen levels, > 20 parts per million, are diagnostic of lactose malabsorption. False-positive results are usually a consequence of inadequate pre-test fasting or cigarette smoking. False-negative results occur when colonic bacteria are suppressed by antibiotics, in lung disorders and in rare patients who do not produce hydrogen.

Patients with a normal lactose tolerance test or normal hydrogen breath test may continue to complain of lactose intolerance. Psychological factors and intolerance to other carbohydrates (sorbitol) or complex carbohydrates (high fibre) need to be considered.

A genetic test for primary lactose malabsorption is available in a few centres, usually in research settings. The best test remains the easiest test. The patient is counselled to adopt a lactose-free diet.

Reference
1. Newcomer AD, McGill DB, Thomas PJ, et al: Prospective Comparison of Indirect Methods for Detecting Lactose Deficiency. N Engl J Med 1975; 293(24):1232.

Resource
1. Högenauer C, Hammer HF, Mellitzer K, et al: Evaluation of a New DNA Test Compared with the Lactose Hydrogen Breath Test for the Diagnosis of Lactase Non-Persistence. Eur J Gastroenterol Hepatol 2005; 17(3);371-6.

Answered by: **Dr. Robert Bailey; and Dr. Seema Patel**

2. When to Use Rosiglitazone

When do you use rosiglitazone?

Submitted by: Bobby Jain, MD, Quebec

There are recently raised concerns about increased MI rates associated with rosiglitazone. In a meta-analysis including 42 trials that reported coronary event rates in patients on rosiglitazone and had a comparator group not on rosiglitazone, the odds ratio of MI was significantly increased in the rosiglitazone group (odds ratio = 1.43).[1] Rosiglitazone also causes fluid retention and may exacerbate heart failure. There are reports that rosiglitazone increases fractures.

For these reasons, I do not recommend the use of rosiglitazone as first-line therapy in patients with Type 2 diabetes. Metformin is the preferred medication with a sulfonylurea (*e.g.*, gliclazide) added if necessary. Short-acting repaglinide with meals is useful in patients with renal insufficiency as there is no drug accumulation with resulting hypoglycemia. Rosiglitazone can be used in diabetic patients who cannot tolerate sulfonylureas or metformin and who have no other cardiac risk factors or heart failure.

Reference
1. Nissen SE, Wolski K: Effect of Rosiglitazone on the Risk of Myocardial Infarction and Death from Cardiovascular Causes. N Engl J Med 2007; 356(24):2457-71.

Answered by: Dr. Bibiana Cujec

3. Safety of PPIs in Pregnancy

Are PPIs safe to use in pregnancy?

Submitted by: Steve Grussman, MD, Richmond Hill, Ontario

There is limited safety data on PPIs in pregnancy; however, data currently available suggest that omeprazole is not teratogenic in humans. Information on other PPIs is limited, though a systematic review of evidence, by Mother Risk at the Hospital for Sick Children, indicates that they are safe during pregnancy. Heart burn is common in pregnancy, treatment begins with lifestyle modification and dietary modifications followed by antacids containing sucralfate. Treatment might eventually include PPIs but the rule of thumb is to choose an older agent in the pharmacologic class for which there are safety data. Applying this rule to PPIs makes omeprazole the drug of choice in pregnancy.

Resources
1. Kallen BA: Use of Omeprazole in Pregnancy—No Hazard Demonstrated in 955 Infants Exposed During Pregnancy. Eur J Obstet Gynecol Reprod Biol 2001; 96(1):63-8.
2. Nikfar S, Abdollahi M, Moretti ME, et al: Use of Proton Pump Inhibitors During Pregnancy. Dig Dis Sci 2002; 47(7):1526-9.

Answered by: Dr. Victoria Davis

4. Accuracy of Allergy Testing

What is the accuracy of ALCAT testing for allergies?

Submitted by: Andy Brockway, MD, Woodstock, Ontario

Many dubious practitioners claim that food allergies may be responsible for virtually any symptom a person can have. In support of this false claim they administer various tests purported to identify offending foods. Claims of this type may seem credible because about 25% of people think they are allergic to foods. However, controlled studies involving placebo-controlled blinded food challenges have found that only about 4% to 6% of children and 1% to 2% of adults actually have a food allergy and most people with food allergies are allergic to less than four foods.[1]

The ALCAT (also known as a leukocytotoxic test) was originally developed in 1956. The basis of the test is that if the patient's white blood cells are mixed with the offending allergen, they swell. The test then measures any swelling of the leukocytes and if a certain threshold of swelling is measured, a positive result is recorded. Studies to date have shown poor correlation between this test and clinical allergy. The marketers, who rely on anecdotal evidence of efficacy, do not mention these disappointing clinical studies. A large number of allergens are tested for and patients are usually positive to a large number of foods, additives and other agents. Cytotoxic testing was promoted during the early 1980s by storefront clinics, laboratories, nutrition consultants and chiropractors. Advocates claimed it could determine sensitivity to food, which they blamed for:

- asthma,
- arthritis,
- constipation,
- diarrhea,
- hypertension,
- obesity,
- stomach disorders and
- many other conditions.

However, controlled studies never demonstrated reliability and revealed that white cells from allergic patients reacted no differently when exposed to substances known to produce symptoms than when exposed to substances to which the patients were not sensitive. Government regulatory actions and unfavourable publicity have almost driven cytotoxic testing from the health marketplace. But a few practitioners still perform it, and many use similar "food sensitivity" tests.

Reference

1. Sicherer SH: Manifestations of Food Allergy: Evaluation and Management. American Family Physician 1999; 59(2):415-24.

Resources

1. American Academy of Allergy: Position Statements—Controversial Techniques. J Allergy Clin Immunol 1981; 67(5):333-8.
2. Sethi TJ, Lessof MH, Kemeny DM, et al: How Reliable are Commercial Allergy Tests? Lancet 1987; 1(8524):92-4.
3. Lieberman P, Crawford L, Bjelland J, et al: Controlled Study of Cytotoxic Food Test. JAMA 1975; 231(7):728-30.
4. Lay Advisory Committee. Allergy and Allergy Tests: A Guide for Patients and Relatives. The Royal College of Pathologists (London) June 2002:1-10.

Answered by: Dr. Tom Gerstner

5. Carcinogenic Risks of CT Scans

What do I tell a patient who asks about their increased risk from having had a CT scan of their thorax and abdomen?

Submitted by: Erica Weinberg, MD, Thornhill, Ontario

There is controversy over the potential increase in lifetime carcinogenic risks from the radiation effects of CT scanning. The estimated organ radiation dose from an adult abdominal CT scan is 10 mGy with variability depending upon many factors including:

- the design of the scanner,
- the scanning time and
- the size of the patient.

The risk is theoretical as no large-scale epidemiologic studies have associated CT scans with cancer risk. The potential carcinogenic risk related to low-dose radiation exposure (defined as < 50 mGy to 100 mGy) has been postulated from survivors of the atomic bombs in Japan. It is unknown whether this is a reasonable extrapolation and applicable to periodic exposure from medical CT imaging. In reality, this theoretical risk should be put into context as most justifiable diagnostic CT imaging is associated with a highly favourable therapeutic ratio of benefit to risk.

Nonetheless, the potential for risk reminds us of the need for judicious CT scan utilization. The practice of multiple CT scans or indiscriminant CT scans for uncertain indications should be discouraged.

Answered by: Dr. Sharlene Gill

6. Prednisone and Shingles

Should prednisone be used routinely for shingles?

Submitted by: Peter Hendrie, MD, Guelph, Ontario

The two purposes of using prednisone for herpes zoster are:

1. Reduction of acute pain and shortening of time to healing of skin lesions
2. Reduction of post herpetic neuralgia (PHN)

Of these, reduction of PHN is more important as it most impacts on long-term quality of life. There are reports of prednisone (60 mg q.d. for three weeks, tapering) either alone or in combination with acyclovir having a 2.3 times greater chance of being pain free after one month than patients not receiving prednisone. Faster healing of skin lesions was not seen.

Oral corticosteroids have not been shown to influence the occurrence or duration of PHN. Because of potential side-effects of oral corticosteroids and minimal long-term benefit, I would avoid their use in treating herpes zoster.

Answered by: Dr. Richard Haber

7. Freezing Cherry Angiomas

Is it true or safe that cherry angiomas can be self treated with a wart "freezing" product?

Submitted by: G. S. Morier, MD, Winnipeg, Manitoba

Wart "freezing" products that are sold OTC contain a mixture of dimethyl ether and propane as the coolant. The manufacturer claims this mixture will freeze at a temperature of -57° C. Liquid nitrogen freezes at a temperature of -196° C.

Cherry angiomas can be treated with liquid nitrogen cryotherapy but I am not aware of any studies showing efficacy of the OTC wart freezing products for cherry angiomas. It is conceivable they could be of use in small or superficial angiomas but are unlikely to be effective for larger or deeper angiomas because they cannot attain low enough temperatures. Personally, I think the best treatment for cherry angiomas is electrodesiccation as smaller lesions can be treated quite precisely. Larger lesions can be treated with a shave removal followed by electrodesiccation of the base.

Finally, pulse dye or CO_2 laser removal can be done but is much more expensive.

Answered by: Dr. Richard Haber

8. Dealing with High BP at Work

A patient shows hypertension (180/110 mmHg on a 24-hour BP monitor at work) and is only okay the rest of the time. The patient can't change their job. How should they be treated?

Submitted by: W. Porten, MD, Vancouver, British Columbia

Ambulatory BP (ABPM) cuffs can be used to make the diagnosis of hypertension (HTN).[1] If mean awake systolic BP (SBP) is 135 mmHg or greater or diastolic BP (DBP) is 85 mm Hg or greater (*i.e.*, when you are at work, in a stressful job); OR if mean 24-hour SBP is 130 mmHg or greater or the DBP is 80 mmHg or greater, then HTN can be diagnosed.

Medical therapy can be used if this is the case, or if you perform the usual assessment of HTN in office visits. Additionally, stress management is recommended for all patients in whom stress is considered a factor.

Reference
1. 2008 Canadian Hypertension Education Program (CHEP) Recommendations for the Management of Hypertension.

Answered by: Dr. Richard Sheppard

9. Treating a Flu Outbreak in a Nursing Home

How would you treat a flu outbreak (that was not Influenza A or B) in a nursing home?

Submitted by: Richard Denton, MD, Kirkland Lake, Ontario

Three antigen types of the RNA virus Influenza infect humans— Influenza A, B and C. The majority of human illness is attributable to Influenza A and B. Influenza C is much less common and usually causes only mild illness; however, occasional severe illness and local epidemics have been reported. The typical "flu vaccine" provides no protection against Influenza C, as the trivalent vaccine contains material from three strains (two from Influenza A, one from Influenza B). Additionally, the available antiviral agents are not effective against Influenza C. The neuraminidase inhibitors (*e.g.*, oseltamivir, zanamivir) are effective for prophylaxis and treatment of Influenza A and B. The M2 inhibitors (*e.g.*, amantidine, rimantidine) are only effective for treatment of Influenza A. Therefore, treatment for an outbreak of Influenza C is primarily symptomatic for infected individuals (*e.g.*, rest, hydration, anti-pyretics, monitoring for complications) and good infection control practices (*e.g.*, respiratory isolation for infected individuals, hand washing, surface sanitization) to minimize the spread of the virus to other residents and staff.

Answered by: Dr. Paul Hernandez

10. Causes of Post-Nasal Drip

What causes post-nasal drip (PND) and what is the best treatment for it?

Submitted by: Paul Stephan, MD, Scarborough, Ontario

PND is a very common complaint in general enterology practice. Although not well defined in medical literature, it is usually described as the sensation of mucus dripping in the back of the throat. It is often associated with:

- chronic cough,
- throat clearing,
- hoarseness and
- observable pharyngeal mucus drainage.

The transport of mucus from the nose and sinuses to be swallowed in the pharynx is a physiological process. PND is caused when large amounts of clear or thick secretions are drained down the throat. The most common cause of PND is acute or chronic rhinosinusitis. Other causes include viral upper respiratory infection, allergic rhinitis and pollution or chemical exposure—all causing nasal congestion and clear discharge. Gastroesophageal reflux disease may also be associated with PND. It is believed that the gastric content irritates the upper airway mucosa and causes nasal discharge. Immotile cilia syndrome is a rare condition that can present with PND. Some cases of PND are idiopathic—in these cases the patient will complain of cough and a sensation of PND with no obvious pharyngeal discharge on examination.

PND treatment is cause dependent. Rhinosinusitis and bacterial upper airway infection should be treated with antibiotics. Patients who are diagnosed with allergic rhinitis are prescribed with oral antihistamines and nasal steroid inhalers. Viral infections are managed with inhaled intranasal steroids or other local decongestants. Saline nasal irrigation is recommended in all cases to improve respiratory mucosal cilliary motility.

If medical treatments do not relieve symptoms, surgery may be necessary, especially if there are structural abnormalities such as hypertrophic turbinates and obstructed osteomeatal complexes.

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

11. Limits to Length of Botox® Use

Is there a limit to how often or for how long Botox® can be used?

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

Botox®, or BTX-A, is a neurotoxin protein, one of seven subtypes produced by the bacteria *Clostridium botulinum*. It prevents the release of acetylcholine from the neuromuscular junction, inhibiting muscle contraction.

It has been used commercially for > 20 years, initially for treating strabismus. Now it is the most commonly used cosmetic procedure. Botox® has been shown to be efficacious in treating visible facial lines (facial rhytides) and hyperhidrosis.

After muscular injection, there is weakness in two to four days, with maximal paralysis in seven to ten days and then resolution of function after three months. Repeated Botox® treatments can inhibit restoration of neuromuscular junction, leading to muscle atrophy, lengthening time needed between treatments. With sweat production, effects can last up to nine months.

There is no evidence to suggest permanent nerve or muscle injury. Nor are there any documented long-term complications with the approved cosmetic use of Botox®.

Before 1997, commercial source of BTX-A was from the original 1979 lot. This was much more antigenic than the new batch introduced in 1997. Despite being more antigenic, there were very few reports of BTX-A antibody production in patients treated for hyperhidrosis or cosmetic reasons pre-1997. Risk of reduced efficacy over time with routine use is considered to be virtually nonexistant. Cases of BTX-A resistance, when they did occur, were following repeated doses > 300 U (most cosmetic doses range from 10 U to 50 U and up to 200 U for hyperhidosis) and resulted in reduced but not a complete lack of response.

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

There is no evidence to suggest permanent nerve or muscle injury. Nor are there any documented long-term complications with the approved cosmetic use of Botox®.

12. Medical Marijuana and Bipolar Disorder

In a patient with failed back surgery, will medical marijuana exacerbate their symptoms of schizoaffective/mixed bipolar disorder?

Submitted by: Mark Saffer, MD, Thornhill, Ontario

Although tetrahydrocannabinol (THC) has analgesic properties, there is a narrow therapeutic margin between the doses that produce useful analgesia and those producing unacceptable adverse central nervous system effects. With repeated marijuana smoking, patients may experience the typical symptoms of intoxication, such as mood changes and decreases in concentration, coordination and the ability to estimate time.

There is good clinical and epidemiological evidence that cannabis use exacerbates the symptoms of schizophrenia in affected individuals. Patients suffering from a schizoaffective disorder or a bipolar disorder run a serious risk of having their symptoms exacerbated with repeated marijuana smoking. If they have to use marijuana on medical grounds for analgesic purposes (as a last resort when all other medicinal analgesics have failed), then the physician should provide regular follow-up and make sure that their psychiatric illness is well controlled on psychotropic medications (*e.g.*, lithium or other mood stabilizers) before prescribing marijuana on medical grounds. The development of synthetic cannabinoids with fewer psychotropic effects seems a more promising way ahead than the use of THC or cannabis products.

Reference:
1. Sadock BJ, Sadock VA: Cannabis-Related Disorders. In: Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 8th edition. Lippincott Williams & Wilkins, Philadelphia, 2005.

Answered by: Dr. Hany Bissada

13. Best Delivery Mode for Breech Twin Presentation

Though presently breech presentations are delivered by elective C-section, what would be the best mode of delivery of Twin B in breech presentation after Twin A has been delivered normally without difficulty?

Submitted by: Ashwin Madhvani, MD, Yarmouth, Nova Scotia

According to the Society of Obstetricians and Gynecologists consensus statement on twin pregnancies: after cephalic delivery of twin A, with non-cephalic twin B estimated weight 1,500 g to 4,000 g, vaginal delivery is indicated if the obstetrician is comfortable with and skilled in vaginal breech extraction.[1] "Breech extraction with or without internal podalic version is associated with a lower C-section rate and similar neonatal and maternal outcomes compared with external cephalic version in the twin pairs whose estimated fetal weights are > 1,500 g."[2]

Caution should be taken if the estimated weight of the non-cephalic twin B is significantly greater than twin A. There is no absolute time limit to the delivery of twin B though for the non-cephalic second twin if breech extraction is considered this should be performed without delay.

Resources
1. The SOGC Consensus Statement: Management of Twin Pregnancies (Part 1). JSOGC 2000; 91:5-15.
2. Twin Delivery. ALARM Course Syllabus 13th Ed. SOGC 2006.

Answered by: Dr. Victoria Davis

14. Limiting "Off" Periods of Levodopa

How can you limit "off" periods in Parkinson's patients on levodopa?

Submitted by: Anonymous, British Columbia

First-line treatment for any complication is to try to prevent it. Starting treatment with a dopamine agonist (*e.g.*, ropinirole, pramipexole) has been shown to decrease the risk of later motor complications. Therefore, as a first-line treatment for all younger patients (< 70-years-old) and those who are older without cognitive difficulties or significant co-morbid medical problems, I would start on an agonist and only add in levodopa (L-dopa) when the agonist at maximal tolerated doses was no longer effective.

If the patient has not been on an agonist before, is only on L-Dopa and is experiencing wearing-off phenomena (the first and therefore the most common bradykinetic motor complication), I would do the following:

1. I would add a Catechol-O-methyltransferase (COMT) inhibitor, such as entocapone. This prolongs the effect of L-Dopa in the brain. Because you are suddenly increasing the dose of brain L-Dopa, it may precipitate dyskinesias. Therefore, you may have to decrease the dose of L-Dopa by 20% to 30%
2. If the COMT inhibitor becomes less effective, or is not tolerated, I would add in a dopamine agonist. I would raise the dose slowly. Once they are up to a reasonable functional level, I would try to decrease the L-dopa to the minimum tolerated level
3. Another possible option is to go to controlled release L-Dopa. This may help early on, just after the onset of the wearing off phenomena. However, it has many challenges. It has decreased bioavailability compared to L-dopa, therefore you may need to increase the total dose. It has some unpredictability as well. With these two pharmacokinetic problems, there can be difficulties with psychosis and dyskinesias as side-effects

In addition to these medication related treatments, it is always good to get patients involved with ancillary services early, such as physiotherapy and occupational therapy.

Reference:
1. Melame E, Ziv I, Djaldetti R: Management of Motor Complications in Advanced Parkinson's Disease. Mov Disord 2007; 22(suppl 17):S379-84 Review.

Answered by: Dr. Inge Loy-English

Starting treatment with a dopamine agonist (e.g., ropinirole, pramipexole) has been shown to decrease the risk of later motor complications.

15. Using Vitamin D Weekly

A new trend seems to give high doses of Vitamin D (10,000 UI) on a weekly basis rather than daily in osteoporosis clinics. What is the reason?

Submitted by: Diane Giroux, MD, Montreal, Quebec

Subclinical vitamin D deficiency is extremely common especially in Northern climates where there is little sun exposure. Also, vitamin D stores decline with age, especially in the winter months. Low vitamin D concentrations are associated with osteoporosis, increased risk of falls and possibly fractures. Many patients with osteoporosis have subclinical vitamin D deficiency.

Commonly used antiresorptive agents, such as bisphosphonates, may be less effective in patients with occult vitamin D deficiency. In addition, hypocalcemia can occur in patients with vitamin D deficiency who are treated with bisphosphonates, particularly when administered intravenously, prior to repletion of vitamin D.

Because vitamin D testing is not widely available, there is a trend to give higher doses of vitamin D (*i.e.*, 10,000 IU per week, which translates to roughly 1,400 IU q.d.) on spec in order to maximize bisphosphonate efficacy and reduce incidence of hypocalcemia. This daily dose is less than the maximum allowed dose in a non-deficient individual (at least 2,000 IU) but greater than the recommended daily dose for the treatment of osteoporosis (800 IU) and is felt to be quite safe.

Of course, if overt vitamin D deficiency is suspected or if patients are not responding to therapy then (OH25) hydroxyl vitamin D levels should be done and the dose titrated to the deficiency.

Resource
1. Holick, MF: Vitamin D Deficiency. N Engl J Med 2007; 357(3):266-81.

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

16. Measuring Alcohol Intake

Can Gamma glutamyl transpeptidase be used to measure alcohol intake? How sensitive is it in measuring acute vs. chronic alcohol consumption?

Submitted by: Laurie Litwinson, MD, Edmonton, Alberta

Gamma glutamyl transpeptidase (GGT) is an enzyme isolated from the hepatocytes and biliary epithelium. The enzyme can also be found in the kidney, pancreas, spleen, heart, lungs and brain. It can be induced by alcohol but also by a variety of other drugs such as warfarin and anticonvulsants. A ratio of GGT/alkaline phosphatase of > 2.5 may indicate alcohol use but more than a third of heavy consumers of alcohol may have a normal GGT. Also, GGT levels do not correlate to alcohol binge drinking. Therefore, GGT is not sensitive or specific enough to be a reliable indicator for acute or chronic alcoholic liver disease.

Resource
1. Sleisenger MH, Feldman M, Friedman LS: Sleisenger and Fordtran's Gastrointestinal and Liver Disease. Eighth Edition. Elsevier Health Sciences, Philadelphia, 2006.

Answered by: Dr. Richmond Sy

17. Liquid Treatment of Finger Infections

Infections on the digits are commonly treated via soaking, but what is the best liquid to use?

Submitted by: Alexandra Tcheremenska, MD, Vancouver, British Columbia

A medical soak involves a continuous immersion in a liquid for variable periods of time for the purposes of softening or cleansing tissue.

Cutaneous infections such as impetigo are commonly treated with soaks to hydrate, soften and remove the honey-coloured crusts. This aids in wound healing while the infection is being treated with appropriate topical or systemic antibiotics.

Although there is no "best" liquid, I normally use normal saline to soak the crust off. Normal saline can be purchased OTC at a pharmacy but it can be approximated by adding one-half teaspoon of table salt to 8 oz of tap water, which is easily prepared and inexpensive. When treating an infection on the digit, the digit can be directly immersed in the normal saline solution or the normal saline can be applied as a soak on gauze squares.

As an alternative, Burow's solution, which contains aluminum acetate, can be used. It is also available OTC and has antiseptic and astringent properties.

Answered by: Dr. Richard Haber

18. When to Discontinue Statin Therapy

When do you consider discontinuing statin therapy in a patient with increasing liver function tests?

Submitted by: H. Ayad, MD, Whitemouth, Manitoba

There is a very small risk of elevation in liver enzymes secondary to statin therapy (< 1%). This usually occurs within the first three months of initiation or escalation of therapy and is dose-dependent. A meta-analysis of 35 randomized trials found an excess risk of aminotransferase (ALT) elevation with statin therapy vs. placebo of 4.2 cases per 1,000 patients.[1] However, in clinical practice, elevation of liver enzymes is very rarely secondary to statin therapy[2] and when present is most likely related to a drug interaction.

A significant elevation of liver enzymes is considered present when ALT level is three times the upper limit of normal. Underlying liver disease is not an absolute contraindication to statin therapy and statins have been used without worsening of liver function in patients with fatty liver, hepatitis C and primary biliary cirrhosis.[3]

A significant elevation of liver enzymes is considered present when ALT level is three times the upper limit of normal.

The current recommendation is to do liver enzymes prior to initiation and after one to three months of statin therapy and periodically thereafter. This recommendation is based upon expert opinion and many authorities do not feel that routine monitoring of liver function is necessary except to identify and then monitor patients with pre-existing liver disease or who are receiving concomitant medications with a potential for drug interactions.

Statins should be decreased or discontinued if alanine ALT level is more than three times the upper limit of normal and this is confirmed on a second occasion.

References
1. Kashani A, Phillips CO, Foody JM, et al: Risks Associated with Statin Therapy: A Systematic Overview of Randomized Clinical Trials. Circulation 2006; 114(25):2788-97.
2. Smith CC, Bernstein LI, Davis RB, et al: Screening for Statin-Related Toxicity: The Yield of Transaminase and Creatine Kinase Measurements in a Primary Care Setting. Arch Intern Med 2003; 163(6):688-92.
3. McPherson R, Frohlich J, Fodor G, et al: CCS Position Statement: Recommendations for the Diagnosis and Treatment of Dyslipidemias and Prevention of Cardiovascular Disease. Can J Cardiol 2006; 22(11):913-27.

Answered by: Dr. Bibiana Cujec

19. Routine Follow-Ups in Childhood Cancer Survivors

What routine follow-ups should be done in adults who had childhood cancers?

Submitted by: Philip Baer, MD, Scarborough, Ontario

Adults who have survived childhood cancers may experience late consequences of the cancer and its treatment. In an analysis of late mortality among childhood cancer survivors, deaths were most commonly attributed to:

- recurrent primary malignancy,
- second malignancy and
- non-neoplastic treatment complications.[1]

Depending upon the type of cancer and treatment, chemotherapy and to a greater extent, radiotherapy, is associated with multiple endocrinopathies including:

- panhypopituitarism,
- hypothyroidism,
- hypogonadism,
- gonadal failure and
- growth hormone deficiency.

Among adult survivors, the cumulative incidence of a severe, debilitating or life-threatening chronic health condition increases over time and may exceed 40% at 30 years after cancer diagnosis particularly for second cancers, CV disease, renal dysfunction, severe musculoskeletal problems and endocrinopathies.[2]

While there are no universally agreed upon routine follow-ups in adults who had childhood cancer, an annual history and physical examination is recommended in addition to yearly surveillance for TSH and free T4, as well as for osteoporosis. Among adults previously treated with anthracyclines or mediastinal radiation who are therefore at risk for late cardiotoxicity, a baseline ECG for evaluation of QTc and periodic echocardiography has been suggested.[3]

References

1. Hudson MM, Jones D, Boyett J, et al: Late Mortality of Long-Term Survivors of Childhood Cancers. J Clin Oncol 1997; 15(6):2205-13.
2. Oeffinger K, Mertens A, Sklar C, et al: Chronic Health Conditions in Adult Survivors of Childhood Cancers. NEJM 2006; 355(15):1572-82.
3. Shankar S, Marina N, Hudson M, et al: Monitoring for Cardiac Disease in Survivors of Childhood Cancers—Report from the Cardiovascular Disease Task Force of the Children's Oncology Group. Pediatrics 2008; 121(2):387-96.

Answered by: Dr. Sharlene Gill