Consultant's Corner

Practical Answers To Your Everyday Questions

Age Limit for Aortic Valve Replacement

1. Is there an age limit to go for aortic valve replacement (AVR) surgery?

Question submitted by:
Dr. Jean-Robert Timothee
Greenfield Park, Quebec

AVR is performed in patients with a wide age range and the proportion of elderly patients undergoing this procedure is increasing. Elderly patients with aortic stenosis (AS) and aortic insufficiency tend to have a poorer preoperative status than younger patients. This leads to higher in-hospital mortality among older patients, which ranges from 5% to 18% in various studies.

Another factor related to the poorer outcome is extensive age-related valvular calcification, which is associated with friable tissues. This makes valve surgery particularly difficult in the elderly, with a high risk of post-operative complications. However, elderly patients who survive the perioperative period often do well. In particular, older patients with AS can have excellent functional recovery and a marked improvement in quality of life, similar to what is observed in younger patients; their level of function and quality of life are the same as a general population of age-matched subjects.

The bottom line is that each patient has to be evaluated individually for the risk of the operation and there is no arbitrary age limit above which AVR is contraindicated.

Answered by:
Dr. Chi-Ming Chow

Treatment of Recurrent Genital Herpes

2. Should we treat a patient with recurrent genital herpes if he is on/off sexually active?

Question submitted by:
Dr. Agathe Blanchette
Trois-Rivières, Quebec

There is no simple answer to this question. Chronic suppressive treatment will decrease the rate of recurrences in almost all patients and can decrease the amount of viral shedding on days with no symptoms present, thus reducing the risk of transmission.

Long-term data suggests that the various commercially available oral anti-herpetic agents are safe. However, these medications are costly and serious adverse effects have occasionally been reported.

Transmission can be partially prevented by using condoms and some partners may be immune. Even those partners who become infected do not necessarily develop symptoms. Some concerns about herpes simplex virus are not completely rational. Ultimately, this is a risk-benefit and cost-benefit assessment which has to be made individually for each patient.

Answered by:
Dr. Michael Libman

Hyperemesis in Pregnancy

3.

Kindly highlight management for hyperemesis in pregnancy.

Question submitted by:
Dr. Sarojadevi Premsagar
Halifax, Nova Scotia

Nausea and vomiting in pregnancy affects 50% to 90% of pregnant women. The most severe form, "hyperemesis gravidarum" is defined as persistent vomiting leading to a weight loss of > 5% of pre-pregnancy weight causing electrolyte imbalance and ketonuria. It occurs in 1% of pregnancies and requires hospitalization for fluid management, IV hydration and if necessary parental nutrition.

The approach to HP is to start with conservative dietary and lifestyle interventions or alternative therapies, such as small meals, ginger supplements and acupuncture and to include medication as required.

Non-pregnancy related causes should be ruled out. "Diclectin," a combination of doxylamine H1 receptor antagonist combined with vitamin B6, is safe in pregnancy and available in Canada. Other safe medications include antihistamines such as dimenhydrinate, diphenhydramine and hydroxyzine and phenothiazines. If these are ineffective, metoclopramide and ondansetron may be used, but there is limited evidence confirming fetal safety. If at any time the patient becomes dehydrated, hospitalization is required.

Answered by:

Dr. Cathy Popadiuk

Bedtime Tooth Brushing

4.

When should a bedtime bottle be followed by a tooth brushing and how many teeth should be in? Also, does infant formula cause the same tooth damage as juice or milk?

Question submitted by:
Dr. Christina Fisher
Toronto, Ontario

Milk bottle or juice bottle caries are an entirely preventable consequence of babies being put to sleep with a bottle containing a liquid with fermentable carbohydrates, which regretably includes juice, milk and infant formula. The carbohydrates provide the substrate for cavity-causing bacteria to thrive, adhere to the developing teeth and produce caries, which can be quite profound.

In addition to not giving children bottles beyond 12-months-of-age, oral hygiene should begin with the first tooth and they should be brushed. Babies that are given a bottle when they are put to bed are usually given the bottle to help them sleep. It is problematic to brush after the bottle and will likely wake up the baby. It is better to avoid high sugar liquids at night, brush twice a day on a regular basis and introduce drinking from a cup before the first birthday.

Answered by:

Dr. Michael Rieder

Fatty Liver

5.

When should you refer a patient with a fatty liver on ultrasound to a specialist?

Question submitted by:
Dr. Nick Wilberforce
Thunder Bay, Ontario

The spectrum of fatty liver disease ranges from hepatic steatosis seen alone on ultrasound to nonalcoholic steatohepatitis, to end stage liver disease (cirrhosis). Patients with elevated liver enzymes (hepatitis) or findings of cirrhosis are at a significant health risk and should be assessed by a specialist.

Patients with isolated hepatic steatosis should be screened for diabetes and hyperlipidemia. They should also undergo nutritional counselling, lose weight and avoid alcohol.

Answered by:
Dr. Jerry S. McGrath

Using Natural Thyroid Hormones

6.

What is the use of natural thyroid hormone and the significance of T3?

Question submitted by:
Dr. Dominic Shiu
Abbotsford, British Columbia

A number of patients with what is considered adequately treated hypothyroidism with synthetic thyroid hormone continue to experience non-specific symptoms including fatigue, weight gain, *etc.* The thyroid gland produces both thyroxine (T4) and triiodothyronine (T3). T3, however, is the metabolically active form and the T4 is converted by deodinase into T3, which then binds to the thyroid hormone receptor.

It is assumed that in patients with hypothyroidism, the exogenously provided T4 will be converted into the metabolically active T3. There has been some concern that the conversion however may not be effective and thus could explain the persistence of symptoms in patients receiving treatment with thyroxine alone. The presence of this defect however has not been confirmed in the vast majority of patients. Nonetheless, a number of different regimens that seek to provide both T4 and T3 have been devised. Natural thyroid hormone is derived from desiccated porcine thyroid and contains variable amounts of thyroglobulin, thyroxine and triiodothyronine. Some patients who have been switched to the "natural" thyroid hormone from the synthetic variety do report an improvement in their symptoms, however randomized double blind clinical trials have not shown them to be any better. Similarly, combination treatment with T3 (liothyronine) and T4 (levothyroxine) has not been demonstrated to be any better than T4 alone. Thus, the use of natural thyroid hormone is generally not advocated.

Answered by:
Dr. Hasnain Khandwala

Penicillin Allergy

7.

What is the likelihood of severe penicillin allergy in offspring of parent with severe allergy?

Question submitted by:
Dr. William Fair
Vernon, British Columbia

Penicillin allergy is one of the most common causes of drug-induced anaphylaxis. Most reactions to penicillin manifest in the form of either urticarial or maculopapular eruptions, but fatalities can certainly occur. Fatal anaphylaxis to penicillin and its derivatives occurs at a rate of 0.002% in the general population, resulting in about 500 to 1000 deaths per year in the US.

Anaphylaxis to penicillin occurs most often in people 20- to 50- years-of-age, but can also affect children and elderly persons. Risk factors for penicillin allergy include race, sex, allergies to other drugs and either a personal or family history of atopic disease. Females are more likely to develop allergy to penicillin, as are people with HIV/AIDS, cystic fibrosis or allergies to penicillin or other drugs in the past. Family history of penicillin allergy in a parent appears to predispose to penicillin allergy in the offspring, although the relative risk is not known. A study by Apter, *et al* reported an increased risk of penicillin allergy in patients with a positive family history of penicillin allergy.

Resource
1. Apter AJ, Schelleman H, Walker A, et al: Clinical and Genetic Risk Factors of Self-Reported Penicillin Allergy. J Allergy Clin Immunol 2008; 122(1):152-8.

Answered by:
Dr. Peter Vadas

Human Respiratory Syncytial Virus Vaccines

8.

Who qualifies for human respiratory syncytial virus (RSV) immunizations?

Question submitted by:
Dr. Jennifer Thomas
Clearwater, British Columbia

There is no active RSV vaccine on the market at this time. Passive vaccination is possible using a monoclonal antibody preparation which may be considered for some children > 24-months-of- age with chronic lung disease of prematurity and for those born at < 32 weeks gestational age even without chronic lung disease. It is given intramuscular injection (IM) every month, starting before RSV season, usually in November, for a total of five doses. The very high cost of this treatment dictates that risk factors for RSV-induced hospitalization be reviewed with a specialist before embarking on this type of prophylaxis. Treatment should be in conjunction with all other possible measures to reduce the risk of severe RSV disease.

Answered by:
Dr. Michael Libman

Aphthous Ulcers

9. How do you distinguish aphthous ulcers from herpes stomatitis?

Question submitted by:
Dr. Ivars Argals
Wetaskiwin, Alberta

Aphthous stomatitis is an illness that causes small ulcers to appear in the mouth, usually inside the lips, on the cheeks, or on the tongue. The exact cause of this disease is not known. The condition is usually seen in children and adolescents from 10- to 19-years-of-age. In about one-third of patients, lesions continue to reappear for years after the initial outbreak. These ulcers are not contagious and cannot be spread from one person to another. Symptoms include ulcers in the oral cavity that are covered with a yellow layer and have a red base. There is no fever (in most cases) and the lesions usually heal within seven to 14 days. Treatment is symptomatic.

On the other hand, herpetic stomatitis is a contagious viral infection, which produces ulceration and inflammation of the gingiva. It is caused by the herpes simplex virus (HSV). Infection within the first six months is rare due to passive protection from antibody transferred across the placenta.

After this period, children are susceptible and subclinical infection is very common.

The primary infection occurs between nine months and five years and may result in an acute gingivo-stomatitis. Primary infections can be seen later in childhood. The clinical picture includes:

- irritability and refusal of food due to difficulty in swallowing,
- high fever,
- vesicles on the tongue, buccal mucosa, gums and lips.

The vesicles breakdown to form ulcers and secondary bacterial infection may occur with enlarged lymph nodes. It is self-limiting and lasts between seven to 10 days. Approximately 80% of the population carry the HSV which makes it difficult to prevent children from contracting the virus. Diagnosis is made on clinical grounds, however, if in doubt viral cultures yield results in 24 to 72 hours. Parents should avoid kissing their children when they have a cold sore. Also avoid sharing glasses, food and utensils. Acyclovir may be used in severe cases.

Answered by:
Dr. Ted Tewfik

Treatment of Bipolar Disorder for GPs

10. What is the first-line treatment of bipolar disorder for GPs?

Question submitted by:
Dr. Andre Spiess
Westbank, British Columbia

The way that the patient presents in the cycle and their "hallmark" symptoms would influence the choice of mood stabilizer. In fact, there are many factors that should be addressed including previous exposure and response, concurrent Axis 3 conditions, availability to lab monitoring and family response to medications if there is a family member with bipolar disorder.

The gold standard is still lithium, which is effective for maintenance therapy in patients with a manic and/or depressive clinical presentation. However, it requires regular blood monitoring as the therapeutic window is quite narrow. Patients whom are rapid cycling (more than three episodes per year) may respond more favourably to valproic acid which is also blood monitored.

Lamotrigine has a good level of evidence in CANMAT guidelines in bipolar disorder with depressed symptoms. In patients with slightly impaired renal function (creatinine clearance < 50 mL/min) or more severe renal impairment (where creatinine clearances 15 mL/min to 30 mL/min) where lithium would be used with caution, if at all, lamotrigine may be indicated

Atypical antispychotics may also be used alone or in conjunction, for example ziprasidone or quetiapine XR in bipolar depression and olanzapine where there is more evidence of mania/hypomania.

Answered by:

Prof. Joel Lamoure

Post-Inflammatory Hyperpigmentation

11. What is the best treatment for post-inflammatory hyperpigmentation of the skin?

Question submitted by:
Dr. Dudu Pallie
St. Catharines, Ontario

The best treatment for post-inflammatory hypopigmentation changes is making sure the inciting cause is identified and avoided thus preventing further induction of pigment change. Most inflamatory processes such as lichen planus, drug eruptions, psoriasis and eczema to burns and irritants can stimulate pigment changes. These changes can sometimes be accentuated by light exposure so good sun protection is helpful. Tincture of time is the best remedy and the reassurance that the change is temporary. The patient has to understand, however, that this can take many months to fade. Topical hydroquinone preparations can reduce the tendency of skin to hyperpigment, but in my experience offer marginal benefit in post-inflammatory hyperpigmentation.

Answered by:

Dr. Scott Murray

Cold Agglutinins

12. What is the significance of persistent cold agglutinins on complete blood count (CBC) of an otherwise healthy patient? Are any further investigations indicated?

Question submitted by:
Dr. Gordon Henderson
Sidney, British Columbia

First, cold agglutinins are not a standard test on the CBC. Typically, the transfusion medicine laboratory will identify it when blood is sent for group and cross-match. Otherwise, one must specifically request a cold agglutinin screen to be collected and transported immediately at 37°C.

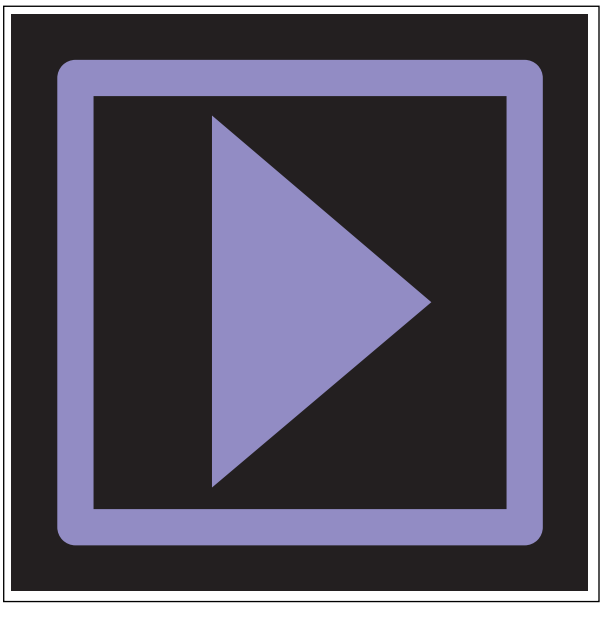
Cold agglutinins are antibodies that cause red blood cells to agglutinate at temperatures < 37°C, (*i.e.*, body temperature). These are usually IgM antibodies that react at 4°C maximally and are hence clinically insignificant *in vivo*. However, cold agglutinins that react at temperatures up to 32°C may potentially lead to acute hemolysis, particularly when extremities are exposed to cold temperatures. The highest temperature at which these antibodies react is known as the thermal amplitude and this value appears to be more important than the antibody titres. Typically, cold agglutinins persist, but in rare cases it may be transient.

For patients with cold agglutinins but without evidence of anemia, further investigations should include determination of the thermal amplitude and antibody titres. Those with high thermal amplitudes and titres should be counselled on cold avoidance, particularly during surgery and have blood warmers during transfusions.

If anemia is present in a patient with cold agglutinins, a search for active hemolysis is required. Evidence of hemolysis includes an elevated lactate dehydrogenase, unconjugated bilirubin and reticulocyte count as well as low serum haptoglobin level and presence of spherocytosis on the patient's peripheral blood film. Although cold agglutinins may be idiopathic, a search for possible underlying causes such as infections with mycoplasma or Epstein-Barr virus and malignancies such as lymphoma or leukemia should be undertaken.

Answered by:

Dr. Kang Howson-Jan; and
Dr. Cyrus Hsia



Immunotherapy for Anaphylactic Sting Patients

13.

Do you keep anaphylactic sting patients on immunotherapy for life?

Question submitted by:
Dr. Michael Keating
Saint John, New Brunswick

Winged stinging insects belonging to the order hymenoptera are responsible for most allergic reactions. These include honey bee, yellow jacket, yellow hornet, white face hornet and wasp. Reactions to insect stings range from mild through life-threatening, with about 40 reported fatalities per year in the US. About 3% of the adult population is at risk for venom anaphylaxis.

Some individuals will develop localized pain, swelling, redness and itching in the immediate area of a sting. When large, these local reactions may last from 48 hours to as long as seven days, but < 5% of individuals with large local reactions will be at risk for anaphylaxis when stung again. In contrast, the risk of systemic allergic reactions in individuals who have experienced systemic manifestations to a sting is high, in the order of 20% to 60%. Individuals who have experienced systemic reactions should be offered venom immunotherapy (VIT). VIT is a highly effective modality of treatment, lowering the risk of systemic reactions to < 5%. The protective effect is sustained for 10 to 20 years.

When initiating VIT, the dose escalation phase will achieve a protective dose over the course of several weeks. After the usual maintenance dose of 100 mcg is achieved, the maintenance injections are given every four weeks for one year, every six weeks during year two and every eight weeks during years three, four and five. Most patients on VIT can discontinue their injections after five years, but patients who have experienced life-threatening anaphylaxis, hypotension, laryngeal edema or severe bronchospasm should continue VIT for more than five years or indefinitely. In addition, patients with strongly positive skin tests after five years of VIT and those with honey bee allergy should be offered lifelong immunotherapy.

Answered by:
Dr. Peter Vadas

Calcium and Vitamin D for Osteoporosis

14.

Is calcium and vitamin D helpful for osteoporosis in a patient confined to bed and wheelchair?

Question submitted by:
Dr. John S. Hall
Sutton, Ontario

Adequate calcium and vitamin D are essential in the prevention and treatment of osteoporosis. Patients who are wheelchair bound are at increased risk for osteoporosis. Weight bearing activity has a significant impact on BMD.

In addition, institutionalized patients are often vitamin D deficient because of minimal sun exposure.

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Answered by:
Dr. Elizabeth Hazel