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Guillain-Barré Syndrome

1.

Can you comment on the prescription, diagnostic tests, and prognosis of Guillain-Barré syndrome?

Question submitted by:

Dr. Peter Palma

Fort McMurray, Alberta

In typical cases, Guillain-Barré Syndrome (GBS), or acute inflammatory demyelinating polyneuropathy, is a rapidly progressive, bilateral, and symmetric weakness of the limbs that may or may not also involve bulbar symptoms and respiratory muscles. It is associated with areflexia and only mild sensory changes, although there is often pain associated as well as autonomic dysfunction. The weakness reaches its maximum within four weeks and then plateaus for a variable amount of time, followed by a slow recovery.

Diagnosis of GBS requires high protein cerebrospinal fluid with few to no cells present (so called albuminocytological dissociation), as well as EMG/nerve conduction studies that demonstrate demyelination with or without associated axonal loss.

A recent Cochrane review found there was no evidence that either plasma exchange or intravenous immunoglobulin is superior to the other for treatment of GBS.

Prognosis varies; worse prognosis is associated with older age at onset (> 50 years), preceding diarrheal illness, and significant weakness at admission and one week later, especially if the patient is unable to weight bear and/or has bulbar involvement.

Resources

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Answered by:

Dr. Sarah A. Morrow

**2.**

In moderate- to high-risk patients who are sensitive or intolerant to statins, what are the alternative therapeutic strategies?

Question submitted by:
Dr. Goldstein
North York, Ontario

No other current intervention reduces serum LDL cholesterol as well as a statin. Furthermore, statins reduce CV events by 20 to 30%.^{1,2} Unfortunately, 10 to 20% of patients are unable to tolerate statins, usually because of muscle-related complaints. Interventions that have shown promise for such patients include rechallenge with a lower dose or different statin; prescribing alternate day, twice weekly, or even once weekly statin; or using a different class of lipid-lowering agent. It may be possible to predict statin-induced myopathy using genetic testing.³ In the case of a “positive” test, it might be wise to revert to another drug class. **Bile acid sequestrants (e.g., cholestyramine, colestevlam), ezetimibe, and niacin are alternative possibilities.** Of course, lifestyle management through diet and exercise should always be recommended. Finally, there are new targets and new treatments on the horizon.⁴

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Answered by:
Dr. Thomas W. Wilson

Vaccines for Cruise Ship Travellers to the Caribbean

3.

Do cruise ship travellers to the Caribbean need vaccines?

Question submitted by:

Dr. Douglas Drover
St John's, Newfoundland

This depends on the type of cruise. It is clear that the risk of vaccine-preventable, food- and water-borne infections on board the major cruise lines is not very different than at home. However, many tourists also leave the ship for excursions on shore, where they may be eating under much less controlled circumstances. For some countries (mostly those in Africa and South America), there are legal requirements for yellow fever vaccination, and, therefore, the vaccine might be needed in order to leave the ship, even when the actual risk of disease is minimal. Similarly, the malaria risk for those who stay on board and sleep in their air-conditioned cabins is usually negligible, but, for those who spend the evening on land, or even out on the deck, prophylaxis may still be warranted. [Each itinerary should be evaluated individually, particularly for cruises visiting countries with malaria or yellow fever.](#) Cruise companies may offer this information; however, many travel agencies are not particularly well informed about the risks.

Answered by:

Dr. Michael Libman

Patients with Umbilical Hernias — Any Guidelines for Surgical Referral?

4.

Are there any guidelines for surgical referral for patients with umbilical hernias?

Question submitted by:

Dr. M. Krieger
Toronto, Ontario

Most umbilical hernias resolve spontaneously with time, usually within the first year of life.¹ Rarely, surgery may become necessary if the hernia becomes incarcerated or strangulated, increases in size after the first year of life, or persists for five years.² [Repair of the hernia at the age of two to three years is advocated by some surgeons if the fascial defect is greater than 1.5 cm in diameter, especially if the edge is thin and sharp.](#)^{2,3} For those umbilical hernias with large fascial defects, repair at a much earlier age is recommended.³ If not repaired in childhood, 10% of umbilical hernias will persist to adulthood.³

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1. Leung AK: Umbilical Hernia. In Leung AK (Ed.). Common Problems in Ambulatory Pediatrics: Specific Clinical Problems. Volume 1. New York, Nova Science Publishers, Inc., 2011. pp. 23–26.
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Answered by:

Dr. Alexander K.C. Leung



Consistently Low WBC or Polymorphonuclear Leukocyte Counts

5.

What investigations do you need for a healthy, asymptomatic individual with a consistently low white blood cell (WBC) count or a low polymorphonuclear leukocyte count? Do we have to send the patient to a hematologist?

Question submitted by:

Dr. Singh
Oakville, Ontario

There are several causes of a consistently low WBCs and low polymorphonuclear leukocytes or neutropenia. By definition, leukopenia is present when a WBC count falls below the reference range that typically ranges from 4.0 to $10.0 \times 10^9/L$ for most laboratories. This range represents two standard deviations from the population mean WBC count, and, as such, 2.5% of the population will have a value less than this. True causes of leukopenia can be due to neutropenia (low neutrophil count) or lymphopenia (low lymphocyte count). Values of basophils, eosinophils, and monocytes do not impact overall low WBC counts. Lymphopenia does not typically require further aggressive investigations. Neutropenia can be due to a number of different problems. An individual's ethnic background is important, as non-Caucasian adults, particularly individuals of African descent, normally have low neutrophil counts. Benign and common causes of neutropenia, in general, may be due to infections and, rarely, aplastic anemia. Malignant processes include myelodysplastic syndrome, chronic myelomonocytic leukemia (CMML), acute myeloid leukemia (AML), myelofibrosis and, less commonly, marrow infiltration due to other malignancies. Other causes include medications (recent antibiotics, herbal, etc.), connective tissue disease (e.g., systemic lupus erythematosus, Felty's syndrome), autoimmune, and congenital causes, and, rarely, paroxysmal nocturnal hemoglobinuria (PNH). If no underlying cause is identified, it can then be called idiopathic; in adults, it is considered a nonimmune, chronic, idiopathic neutropenia of adulthood, a benign condition.

Most patients who have a mild, chronic neutropenia between 1.0 and $2.0 \times 10^9/L$ are asymptomatic; they do not require aggressive investigations and can just be monitored annually. Reasons for a referral to a hematologist include a neutrophil count below $1.0 \times 10^9/L$, other cytopenias, constitutional symptoms, and/or associated lymphadenopathy and splenomegaly.

Answered by:

Dr. Cyrus Hsia and
Dr. Kang Howson-Jan



Polyethylene Dosing

6.

When using polyethylene glycol 3350, is there any advantage/disadvantage in using doses higher than 17 g daily?

Question submitted by:
Dr. J. Peter
Edmonton, Alberta

A number of trials have demonstrated the efficacy and safety of 17 or 34 g daily dosage of polyethylene glycol (PEG) 3350 in managing adults with nonorganic constipation, although the majority of data have been accumulated for the 17 g daily dosage.^{1,2} Data from a single, randomized, double blind, parallel pilot study of 24 patients has also suggested the efficacy and safety of the administration of a single 68 g dose of PEG laxative as providing effective and safe alleviation of constipation symptoms in adults within a 24 hour period.³ As such, standard doses of PEG 3350 between 17 and 34 g, titrated to clinical effect, are reasonable as part of the therapeutic management of the adult patient with chronic, nonorganic constipation.

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Answered by:
Dr. Theodore Xenodemetropoulos

7.

Can Alkaline Foods Change the pH Level of the Body?

Is it possible that eating alkaline foods can reduce the risk of getting cancer, and could this diet change the pH level of the body?

Question submitted by:
Dr. Berwin Yip
Unionville, Ontario

This is theoretically possible, but it is unproven. Certainly, greater emphasis should be placed on known modifiable risk factors, which include maintaining a healthy diet (e.g., fruits and vegetables), exercising, minimizing alcohol intake, and stopping tobacco use. Given the body's regulatory and homeostatic mechanisms, it is not really possible to change the pH of the body through such a diet, but there will likely be effects on gut flora.

Answered by:
Dr. Roger Y. Tsang

8.

In children who require treatment for ADHD, is an ECG essential before starting treatment if there is no family history of sudden death?

Question submitted by:
Dr. Anne Morty
Westmount, Québec

An ECG is not essential before starting treatment with stimulant medication in children with ADHD, if there is no indication of underlying CV disease in the patient and no family history of sudden death. While it is not known for sure whether stimulants increase the risk for sudden death or serious CV events in children with pre-existing CV disease, these medications should be used with caution in this population. Thus, a thorough personal history looking for the presence of underlying CV disease in the patient, such as syncope, chest pain, or a history of rheumatic fever or palpitations, should be performed before starting stimulants. Of equal importance, a family history of sudden death or heart disease should also be performed before beginning pharmacologic therapy for ADHD. Finally, a thorough physical examination looking for evidence of CV disease, such as a murmur, irregular heart rhythm, or hypertension, should be performed before stimulant medication is prescribed. If an abnormality is found on any of these three assessments, an ECG should be done to assess for the presence of undiagnosed CV disease in the patient before initiating treatment. However, if the child is very well with a negative family history of adverse CV events, an ECG is not required before starting treatment for ADHD.

Answered by:
Dr. Krista Helleman



Blood Pressure Reading

9.

Is a normal blood pressure reading with an increased pulse pressure more detrimental than an elevated blood pressure reading with a normal pulse pressure?

Question submitted by:

Dr. Duggal

Bathurst, New Brunswick

Pulse pressure is defined as the difference between systolic and diastolic pressure measurements and represents the generated force of left ventricular contraction with typical values less than 50 mmHg. Pulse pressure is strongly correlated with systolic blood pressure, and it will be highest in cases of isolated systolic hypertension, as is seen commonly in the elderly. The pulse pressure tends to widen with age due to increased conduit vessel stiffness with resultant loss of elastic accommodation and recoil of the capacitance vessels. Hyperdynamic states, such as exercise, pregnancy, fever, anemia, and thyrotoxicosis, can also cause the pulse pressure to widen, as can significant aortic valve insufficiency. In reference to the relationship between pulse pressure and CV risk, it has been observed in studies of both normotensive and hypertensive patient groups that a wide pulse pressure is an independent predictor of all-cause and CV mortality.¹ Part of this risk may be due to the lowered coronary perfusion pressure, secondary to lowering of the diastolic pressure, underscoring the need for caution when managing hypertensive patients who have concomitant coronary artery disease. However, even though a wide pulse pressure may be a marker for increased CV risk on a population level, it is of less value in this regard for the individual. Systolic blood pressure remains the most statistically robust and clinically reliable blood pressure CV risk parameter.² So, while pulse pressure may be useful in highlighting a pathological hyperdynamic state or a valvular abnormality, systolic blood pressure is the parameter of choice for antihypertensive, therapeutic decision making.

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Answered by:

Dr. Theodore K. Fenske



Therapeutic Treatment for Low HDL Cholesterol

10.

What is the best and most effective therapeutic treatment for low HDL cholesterol besides lifestyle changes?

Question submitted by:

Dr. Omayma Fouda
Corner Brook, Newfoundland

There are a number of therapeutic agents available to treat low HDL. Fibric acid and derivatives, such as gemfibrozil, fenofibrate, and bezafibrate, increase HDL cholesterol by 10 to 15% in addition to causing reduction in triglycerides. Nicotinic acid derivatives, such as niacin, in doses between 1,000 and 2,000 mg daily, increase HDL cholesterol by up to 30%. The cholesteryl ester transfer protein inhibitors, such as dalcetrapib, increase HDL cholesterol by up to 50%. It should be noted, however, that despite causing an increase in HDL, clinical trials have not demonstrated a reduction in vascular events with these agents. Extended release niacin did not demonstrate any significant reduction in CV events in the Atherothrombosis Intervention in Metabolic Syndrome with Low HDL/High Triglycerides: Impact on Global Health (AIM-HIGH) study. Fenofibrate did not show any reduction in CV end points when added onto a statin in the The Action to Control Cardiovascular Risk in Diabetes (ACCORD) study. Dalcetrapib also did not demonstrate a reduction of end points in the Dalcetrapib dal-OUTCOMES trials, and further development of this agent in clinical trials has been stopped.

Answered by:

Dr. Hasnain Khandwala



Can Levonorgestrel Counter Estrogen's Effect on the Uterus?

11.

Can levonorgestrel be used postmenopausally to counter estrogen's effect on the uterus?

Question submitted by:

Dr. M. Pienaar

Prince Rupert, British Columbia

Levonorgestrel is a form of progesterone that is used in some oral contraceptive pills, the transdermal patch, and the progesterone IUD. Unopposed estrogen, or an imbalance between estrogen and progesterone where there is an excess of estrogen, can lead to endometrial hyperplasia and, possibly, endometrial cancer. Postmenopausal women should have low levels of estrogen and progesterone, as their ovaries are no longer functioning. Some obese women, however, continue to have estrogen levels sufficient enough to cause endometrial stimulation through conversion of androstenedione, found in adipose tissue, to estrone, a weak estrogen. In this case, particularly in patients who are not good surgical candidates due to medical comorbidities, progesterone treatment to counteract the circulating estrogen has been used. Traditionally, the progesterone prescribed has been oral medroxyprogesterone acetate or megestrol acetate. Recently, the levonorgestrel IUD (Mirena) has been used to treat endometrial hyperplasia and even well-differentiated endometrial cancer. The progesterone IUD is not approved for this purpose, but anecdotal case reports and clinical trials are ongoing in the study of its efficacy to treat endometrial hyperstimulation. Technically, endometrial hyperplasia and cancer are contraindications for the levonorgestrel IUD.

For a postmenopausal woman suffering debilitating hot flashes and night sweats, hormone replacement should be used for the shortest period of time and in the lowest possible dose. Where the woman has a uterus in place, she requires progesterone for endometrial protection. The levonorgestrel transdermal patch is available for this purpose as are oral progesterones. [The levonorgestrel IUD, which can last for five years, may be an option to counter estrogen's effect on the uterus but may be removed sooner when the estrogen is discontinued. It is not, however, approved for this indication at this time.](#)

Answered by:

Dr. Cathy Popadiuk

cme