Consultant's Corner

Practical Answers To Your Everyday Questions

1. Provoking an embolic event

Which is more likely to provoke an embolic event—persistent atrial fibrillation or paroxysmal atrial fibrillation?

Question submitted by:
Dr. T Brandys
Ottawa, Ontario

Recent studies suggest that patients with paroxysmal/intermittent atrial fibrillation (AF) and persistent/permanent AF have a similar risk of stroke when adjusted for the associated stroke risk factors. Patients with paroxysmal AF are generally younger and have a lower prevalence of associated clinical risk factors than those with persistent AF; therefore, the absolute stroke rate is lower. Furthermore, a third of patients with paroxysmal AF develop chronic AF over two to three years. The risk is similar in men and in women. The current guidelines[1] recommend that patients with paroxysmal AF be treated in a manner similar to those with persistent AF, basing the use of anticoagulants on the presence of stroke risk factors.

Answered by:
Dr. Chi-Ming Chow

Reference

1. Singer DE, Albert GW, Dalen JE, et al: Antithrombotic therapy in atrial fibrillation: The seventh AVVP conference on antithrombotic and thrombolytic therapy. Chest 2004; 126(3 Suppl): 429S-56S.

2. Antidepressants & seizures

What antidepressants are least likely to risk seizure activity in a patient with a pre-existing seizure disorder?

Question submitted by:
Dr. Lindsay Kennedy
Calgary, Alberta

Seizures are a known, but relatively rare, consequence of antidepressant therapy. Risk estimates are influenced by:

- drug and dosing,
- patient population and
- pre-existing seizure potential.

For selective serotonin reuptake inhibitors (SSRIs), venlafaxine, and mirtazapine, the risk is generally considered to be low (0.1% to 0.4%) and not substantially different to the baseline risk in the general population (0.07% to 0.09%). The risk with the tricyclic antidepressants, maprotiline and bupropion is slightly higher (0.4% to one per cent to two per cent), but dependent on dose, particularly peak serum levels in the case of bupropion.

Monoamine oxidase inhibitors (MAOIs) poses the least risk of seizures. Some seizures reported with SSRIs may be caused by hyponatremia due to inappropriate antidiuretic hormone secretion syndrome (SIADH).

Answered by:
Dr. Pierre Chue

3. Eradicating S. aureus

How would I eradicate Staphylococcus aureus from the nose/skin of a five-year-old boy with recurrent impetigo?

Question submitted by:
Dr. Bruno Tremblay
Québec, Québec

Recurrent impetigo can sometimes indicate staph carriage. Local treatment with topical agents such as mupirocin and fusidic acid combined with antibacterial washes (such as triclosan) can be successful.

Nasal application of topical antibiotics—usually mupirocin—applied to each nostril, three times daily, is helpful. In resistant cases, often oral agents such as cloxacillin, cephalexin and rifampin are used in an attempt to clear nasal carriage. Rifampin should only be used in combination with other antibiotics so that resistance to rifampin does not occur. It is also important to heal skin conditions that may act as a portal for recurrent infections such as atopic dermatitis. Since this condition is highly contagious, any family member with impetigo should also be treated.

A persistence of staph carriage should prompt an evaluation of contacts and a possible consultation with an infectious disease specialist.

Answered by:
Dr. Scott Murray

4. Statin medications

Why are statin medications recommended to be taken in the evening?

Question submitted by:
Dr. Joseph Smith
Vancouver, British Columbia

Most manufacturers recommend that statins be taken in the evening because the mevalonate pathway (HMG-CoA reductase pathway) activity and the liver production of cholesterol is the highest between midnight and three in the morning. One clinical trial showed an additional 10% reduction of LDL-C and an eight per cent reduction of total cholesterol achieved by taking simvastatin in the evening vs. in the morning.[1] This recommendation applies to most statins on the market except for atorvastatin and rosuvastatin, which can be taken either in the morning or in the evening because of their longer half-lives. Lovastatin is best taken with supper, since food helps with drug absorption.

Answered by:
Dr. Chi-Ming Chow

Want to know more about LDL-C? Read about it on page 63!

References

1. A Wallace, Chinn D, Rubin G, et al: Taking simvastatin in the morning compared with in the evening: Randomized controlled trial. BMJ 2003; 327(7418): 788.

The treatment of corneal erosions

5. Is it still indicated to patch or close an eye with corneal erosion?

Question submitted by:
Dr. Christian Dutil
Blainville, Québec

It is indicated to do so only if you have no better alternative treatment. Corneal erosions usually occur spontaneously in patients, particularly in women between the ages of 30 and 50, who have basement membrane disease of the corneal epithelium. These patients will, on occasion, wake with agonizing pain in either eye, with photophobia, with lacrimation and with blurred vision. These symptoms will improve as the day progresses.

The immediate treatment of corneal erosions due to corneal dystrophy is similar to the treatment required for traumatic corneal abrasions. The principles of treatment are the following:

1. Alleviate pain
2. Prevent infection
3. Promote rapid, safe healing without scarring
4. Return the patient to normal function as quickly as possible
5. Prevent recurrences

The immediate treatment of corneal erosions due to corneal dystrophy is similar to the treatment required for traumatic corneal abrasions.

The old standby of pressure patching with the eyelids firmly closed, has stood the test of time in that it is preferable to no treatment at all. However, we have learned much about treating corneal epithelial defects from surface refractive surgery, particularly photorefractive keratectomy.

Emergency treatment involves the placement of a bandage contact lens on the cornea. This affords exquisite relief almost instantaneously if the correct size, contour and type of contact lens is placed appropriately. It is essential that every emergency room physician learn how to aseptically insert bandage contact lenses. The eye must then be carefully medicated until the abrasion is healed and the contact lens can safely be removed.

My preferred medication regime is moxifloxacin, one drop every four hours, diclofenac, one drop every six hours and tetracaine 0.5% preservative free, one drop as required for pain. Tetracaine should not be administered more often than one drop every hour. A clear polycarbonate shield is taped over the eye at night so that the contact lens is not accidentally rubbed out. The patient has a slit lamp evaluation every day until the abrasion has healed. This is often in 24 hours or less. At this time the contact lens can be removed and topical medication can usually be discontinued.

Answered by:
Dr. Malcolm Banks

6. Differences between dysthymia and major depressive disorders

What are the differences between dysthymia and major depressive disorders in terms of morbidity and treatment?

Question submitted by:
Dr. Gregrory Coté
Montréal, Québec

Dysthymia is characterized by a persistently depressed mood for at least two years and presence, while depressed, of two (or more) of the following:

- poor appetite or overeating,
- insomnia or hypersomnia,
- low energy or fatigue,
- low self-esteem,
- poor concentration
- difficulty making decisions and
- feelings of hopelessness.

It is a chronic mood disorder with a high rate of progression into major depressive disorder (MDD), also known as double depression. Like MDD, it is more prevalent in women and there is a high rate of comorbidity with other psychiatric disorders. Although overall dysthymia is less disabling than MDD, it is still associated with a risk of suicide and functional impairment. As with all psychiatric disorders, greater chronicity correlates with a poorer outcome.

The treatment of dysthymia is similar to that of MDD in the form of pharmacotherapy and psychotherapy.

Answered by:
Dr. Pierre Chue

7. An abnormal menstrual cycle

A 52-year-old patient who had no cycles for one year began a sexual relationship. She sees her new partner every six to eight weeks and each time gets a period one or two days after. What is the physiologic basis? Does the bleeding need investigation? Her PAP is normal.

Question submitted by:
Dr. Sarah Varner
Toronto, Ontario

There is no physiologic basis for a human female to have a true menstrual period in association with sexual activity. So, the question becomes why is this patient having what sounds like postmenopausal bleeding and how should this be investigated?

The timing with sexual activity suggests an anatomical cause and I would suspect a structural lesion such as an endometrial or cervical polyp, or vaginal atrophy. A thorough physical exam must be performed to identify any of these and to exclude malignancy of the lower genital tract. In addition, any woman with postmenopausal bleeding requires assessment of the endometrium to rule out endometrial cancer.

If the patient is truly menopausal and her physical exam is normal, (*i.e.,* including swabs for sexually transmitted infections), I'd proceed by performing a hysteroscopy and dilation and curretage.

Answered by:
Dr. Susan Chamberlain

8. Recommendations for perimenopausal women

What would be recommended for a perimenopausal woman with irregular heavy periods and migraines who does not require birth control—oral contraceptive pills or cyclic progesterone?

Question submitted by:
Dr. Jill McGilvary
Coquitlam, British Columbia

Any perimenopausal woman who is having irregular heavy bleeding should undergo endometrial sampling to exclude malignancy prior to instituting any therapy. Exclusion of a structural lesion (submucosal fibroid or endometrial polyp) by saline infusion sonohysterogram or hysteroscopy could be done before, or after, a trial of medical management depending on your index of suspicion. It is also useful to establish whether or not the patient is ovulatory or anovulatory which may help in determining what type of treatment would be most helpful.

In the anovulatory patient, treatment goals are twofold:

1) Reduce symptoms of bleeding
2) Prevent endometrial hyperplasia due to unopposed (endogenous) estrogen

It is also useful to establish whether or not the patient is ovulatory or anovulatory which may help in determining what type of treatment would be most helpful.

Medical options to accomplish this include the oral contraceptive pill (OCP), cyclic progesterone, Depo-Provera® or the Mirena intra-uterine device. Before prescribing an OCP, it is important to assess risks for thromboembolic disease including:

- age,
- family history,
- smoking status and other
- medical illness.

Migraines alone are not a contraindication unless they are associated with visual or neurological aura. In fact, menstrual migraines may be relieved by the use of the OCP, especially when taken continuously.

In the ovulatory patient, medical control of menorrhagia can be achieved by the above methods, as well as non steroidal anti-inflammatory drugs, danazol and tranexamic acid. Endometrial ablation is another option. Choosing between possible options requires a discussion about the side-effects, the route of administration and adherence to treatment.

Answered by:
Dr. Susan Chamberlain

9. The use of biologic agents in the treatment of RA

What is the safety and efficacy of new biologic agents in the treatment of rheumatoid arthritis?

Question submitted by:
Dr. Carmela Vincent
Toronto, Ontario

New biologic agents have shown excellent results in the management of rheumatoid arthritis (RA). These new agents show improvements in:

- signs and symptoms of disease,
- quality of life and
- slowing down of the articular erosive process.

However, long term safety issues or the occurrence of unexpected side-effects have not been adequately addressed by randomized trials or by spontaneous reporting.

Therefore, all patients on biologic agents should be carefully monitored for any adverse event. The most common complications of treatment are an increased incidence of common and opportunistic infections. Other concerns include:

- worsening heart failure,
- demyelinating disease and
- an enhanced risk for malignancies (particularly lymphoma).

Answered by:
Dr. Mary-Ann Fitzcharles

10. Testing for cardiovascular risk

Which test is more accurate in predicting cardiovascular risk in susceptible patients—body mass index or waist-hip ratio and why?

Question submitted by:
Dr. As Guron
Stephenville, Newfoundland

Body mass index (BMI), defined as weight (kg)/height (m2), is an accepted measure to assess if a patient is overweight (25 kg/m2 to 30 kg/m2) or obese (> 30 kg/m2). However, BMI may overestimate body fat in athletes and those who have a muscular build and may underestimate body fat in older persons and others who have lost muscle mass. Studies suggest that fat distribution, rather than total body fat, is a better predictor for cardiovascular risk factors.

Waist-hip ratio (WHR) is less sensitive to changes in body fat and visceral fat. Waist circumference (WC) has been proposed to be a better indicator of cardiovascular risk factors.[1] Recent guidelines recommend WC over the WHR as a predictor of obesity-related diseases, due to its simplicity and its correlation with body fat as measured by computed tomography.[1] Patients with increased WC (> 102 cm in men and > 88 cm in women) should be encouraged to lose weight and increase their physical activity.

Answered by:
Dr. Chi-Ming Chow

Reference
1. Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. Executive summary of the clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. Arch Intern Med 1998; 158:1855-67.

Constipation in children

11.

Constipation in children—best agents to use and dosages?

Question submitted by:
Dr. Angela Macarthur
Calgary, Alberta

Constipation in children is a common and given the frequency with which it is seen, a very understudied problem. There are a few caveats that need to be considered when assessing children with constipation. Assuming that the child suffers from functional constipation (the most common cause of constipation) and that we have excluded by the history and the physical exam any potentially serious causes of constipation, such as Hirschsprung's disease, therapy should be based on the following principles:

1) first that stool texture is a major element in childhood constipation and
2) therapy, which may be needed for a length of time, is most likely not perpetual.

Ensuring that the stool is sufficiently soft is a key part in the therapy of childhood constipation and thus, stool stimulants should be avoided. Notably, stool stimulants tend to be unpleasant tasting and are usually only modestly effective. The initial therapy for childhood constipation should aim at using stool softeners such as lactulose, which can be used for infants in doses of one to two teaspoons, twice daily and in larger doses in toddlers. Dose adjustment should be on the basis of having one to two soft stools a day; if this is not being achieved, the dose can be increased. Alternate stool softeners have also been used. In the case of more serious or recalcitrant constipation, electrolyte with polyethylene glycol can be used. In this case, one to two teaspoons of the dry powder is added, once or twice a day, to the child's favourite liquid. Again, dose adjustment should be on the basis of stool quality and quantity.

It should be emphasized that dietary modification, in terms of increasing water intake, increasing fruit and fiber and other manipulations to increase stool bulk and softness, should accompany therapy. Often, this is not enough in the initial phase to increase stool output. However, over three to four weeks of therapy, the goal should be to phase out stool softeners and to continue with dietary modification alone. It should also be noted that in children with long histories of chronic constipation, prolonged therapy with stool softeners may be required.

It should be emphasized that dietary modification, in terms of increasing water intake, increasing fruit and fiber and other manipulations to increase stool bulk and softness, should accompany therapy.

Answered by:
Dr. Michael Rieder

12. Treatment options for people with chronic pain

What is your opinion on the use of methadone for treating people with chronic pain vs. the use of more traditional opiates (*e.g.,* morphine)?

Question submitted by:
Dr. Willem Grabe
Red Deer, Alberta

There are a number of characteristics that make methadone an interesting and unique agent for the management of chronic pain. In addition to a long half-life, methadone acts as an agonist on both mu- and delta-opioid receptors, has N-methyl D-aspartate antagonist activity and inhibits the reuptake of monoamines. Multiple sites of action may favor improved response in pain management. Furthermore, methadone is cheaper than many other agents and dosing can be fine-tuned to an individual patient's needs in view of liquid formulation as well as capsules of varying strength. Methadone is particularly useful in neuropathic pain, but has an increasing role in nociceptive pain.

Answered by:
Dr. Mary-Ann Fitzcharles

13. Diagnosing PMR

What level of C-reactive protein should we look for in order to help diagnose polymyalgia rheumatica?

Question submitted by:
Dr. Caroline Poland
Toronto, Ontario

Inflammation is usually associated with elevation of acute phase reactants such as the C-reactive protein (CRP), serum interleukin-6 (IL-6) and an elevation of erythrocyte sedimentation rate (ESR). However, these values may be normal in between 10% to 25% of patients with clinical polymyalgia rheumatica (PMR).

Levels of CRP in PMR are generally elevated in the lower range with means of 3.5mg/dl and a concomitant mean ESR of 68mm/hr. CRP may also return to normal more slowly than the ESR. The ESR will usually return to normal within a month of starting corticosteroid treatment.

Persistently elevated levels of CRP or ESR have been reported to be associated with an increased risk of relapse or recurrence of symptoms.

Answered by:
Dr. Mary-Ann Fitzcharles

14. The workup for an elevated hemoglobin

What would be the workup for an elevated hemoglobin (> 160 g/L on more than two occasions with hematocrit of > 50%) in an otherwise healthy patient?

Question submitted by:
Dr. Habtu Demsas
Selkirk, Manitoba

The main differential diagnosis would be polycythemia rubra vera (*i.e.,* primary polycythemia) (PRV) vs. secondary polycythemia. Investigations should include:

- determination of red cell mass and plasma volume,
- blood gases,
- chest X-ray and
- serum erythropoietin level.

Imaging of the abdomen for splenomegaly and the presence of renal abnormality can be considered. Furthermore, the serum vitamin B12 level can be high in PRV. More recently, a point mutation in the Jak2 gene has been described in more than 80% of patients with PRV. This may lead us to a molecular test for PRV.

Answered by:
Dr. Kang Howson-Jan

15. Using a wick in severe otitis externa

As a family physician, how do I use a wick in a severe otitis externa?

Question submitted by:
Dr. B. Lancing
Vancouver, British Columbia

The essential step in treating acute otitis externa is cleaning of the external auditory canal (EAC). This can be accomplished using a swab or suction. Otic drops containing antibiotics and steroids are usually prescribed. Anti-fungal topical preparations may be used if a fungal infection is suspected. Placement of a wick is advised only if the EAC is very swollen and painful and is preventing proper cleaning or suctioning. The wick (sponge or gauze) helps to deliver the drops and keeps the medication in contact with the EAC. It should be removed in 48 to 72 hours. Systemic antibiotics, as well as narcotics, may be needed in severe cases.

Answered by:
Dr. Ted Tewfik

Want to know more about ear exams? Read about it on page 85!

16. Insulin therapy in patients with Type 2 diabetes

What is the easiest/safest way to initiate insulin therapy in a patient with Type 2 diabetes?

Question submitted by:
Dr. Dan Martin
Winnipeg, Manitoba

The type of insulin, dose and time of administration needs to be individualized. In general, in patients who are on maximum doses of oral agents and have elevated fasting blood glucose levels, administration of intermediate to long-acting insulin at bedtime and continuing their oral agents is the easiest approach. A conservative starting dose would be 0.1 u/kg. The newer basal insulins, such as insulin glargine and insulin detemir cause less nocturnal hypoglycemia and thus offer a potential advantage. However, the approach will not be suitable for patients who primarily have daytime and/or postprandial hypoglycemia. In this case, a basal insulin, given once or twice daily, needs to be combined with short-acting insulin at meal time. In that event, generally 40% of the estimated insulin requirements are given as basal insulin and the rest is divided with meals.

Rapid acting analogs, such as insulin lispro and aspart are generally preferred over regular insulin as they have a rapid onset of action and cause less hypoglycemia.

Answered by:
Dr. Hasnain Khandwala

17. Hyperthyroid and hypothyroid screening

Should we be performing annual thyroid stimulating hormone levels in patients who have first-degree relatives with hyper or hypothyroidism?

Question submitted by:
Dr. Patrick Murray
Vancouver, British Columbia

The American Thyroid Association recommends screening for thyroid dysfunction by measuring a thyroid stimulating hormone (TSH) level in adults every five years beginning at age 35. They state that earlier and more frequent screening may be required in patients with other risk factors including a positive family history.

I don't believe that indefinite, annual TSH testing in all first-degree relatives of patients with autoimmune thyroid disease is required or cost-effective. I would suggest obtaining a baseline TSH level and antithyroid antibodies.

Patients with negative results could then be screened like the general population, whereas patients with positive antibodies and/or abnormal TSH levels may benefit from more frequent testing.

Answered by:
Dr. Hasnain Khandwala

For more on autoimmune thyroid disease, turn to page 50 in Consultant's Corner!

18. About herpetic whitlow

Herpetic whitlow as an initial presentation of Herpes simplex with systemic systems. What is the period of viral shedding and is there respiratory spread or only at site of lesion? What is the average frequency of recurrence?

Question submitted by:
Dr. Coleen Keating
Ottawa, Ontario

Compared to herpes labialis or herpes genitalis, there is little published data on herpetic whitlow. The period of viral shedding is unknown, but there is likely to be some shedding until the lesions become dry. Herpes simplex (HSV) generally only causes a localized disease, with shedding only in the area of the lesions. However, many cases of whitlow occur in individuals with simultaneous labial or genital herpes, suggesting auto-innoculation.

The frequency of recurrences is highly variable, but recurrence seems to be more common in whitlow caused by HSV-2compared to HSV-1

Answered by:
Dr. Michael Libman

19. When should thyroid supplements be given?

Given the new recommendations for normal range in thyroid stimulating hormone levels, at what level should thyroid supplements be used?

Question submitted by:
Dr. Pat Simpson
Saint Albert, Alberta

Evidence suggests that the normal thyroid stimulating hormone (TSH) range may lie between 0.5 mIU/L to 2 mIU/L instead of 0.5 mIU/L to mIU/L. Thus, patients with TSH between 2.0 mIU/L and 5.0 mIU/L may have mild hypothyroidism. However, there is no evidence to suggest either any adverse health outcomes associated with such mild disease, nor any benefit of treatment. Even in patients with TSH greater than 5 mIU/L and normal free thyroxine levels, controversy exists about the need for treatment. Thus, based on the evidence, I would not recommend treating patients with a TSH between 2 mIU/L and 5 mIU/L and I would also question the need to treat all asymptomatic patients with a TSH over 5 mIU/L with normal free thyroxine levels. I would measure the thyroid antibodies because antibody positive patients are more likely to develop overt hypothyroidism over time. I would also monitor the TSH level every one to two years.

Answered by:
Dr. Hasnain Khandwala

20. Prevention of chronic sinusitis

Please discuss long-term prevention of chronic allergic sinusitis ?

Question submitted by:
Dr. Colin Leech-Porter
Victoria, British Columbia

A number of complications have been associated with allergic rhinitis, namely sinusitis, otitis media, post-nasal drip and asthma. Chronic allergic sinusitis often shares the same triggers as allergic rhinitis, namely indoor allergens such as:

- dust mites,
- animal dander,
- indoor molds and
- cockroach allergens.

Outdoor (or seasonal allergens) such as pollens and outdoor molds, may be contributors.

Management of allergic sinusitis includes:

1) Appropriate identification of offending allergens (usually by skin prick testing)
2) Detailed instructions on avoidance to reduce ongoing exposures and the need for treatment

The use of intranasal steroids will help to facilitate sinus drainage, alleviate associated discomfort and reduce the risk of acute bacterial sinusitis. When intranasal steroids are ineffective or poorly tolerated because of either troublesome local irritation or epistaxis, allergen immuno-therapy is effective in relieving symptoms of allergic inflammation and preventing the long-term sequelae associated with untreated allergic rhinitis.

One specific form of chronic allergic sinusitis that deserves special mention is allergic fungal sinusitis. This is a condition in which fungal elements are found in sinus lavage along with an eosinophilic infiltrate, elevated total immunoglobulin E in peripheral blood, aspergillus precipitins in peripheral blood and positive skin tests to aspergillus. This form of allergic sinusitis is often difficult to treat, requiring systemic steroid therapy. The role of specific anti-fungal therapy is contentious.

The use of intranasal steroids will help to facilitate sinus drainage, alleviate associated discomfort and reduce the risk of acute bacterial sinusitis.

Answered by:
Dr. Peter Vadas

21. Warfarin use in patients with thrombocytopenia

Use of warfarin in patients with thrombocytopenia. When to stop it? What's the alternative to warfarin that does not worsen the thrombocytopenia?

Question submitted by:
Dr. H. William
Cornwall, Ontario

There is no firm lower threshold for platelets that would be considered safe for therapeutic anticoagulation with warfarin. In our inpatient population who have received myelosuppressive therapy and are expected to be thrombocytopenic for two weeks or more, we tend to transfuse platelets to maintain a count of 30 $X10^9$/L or higher in those patients continuing with anticoagulation.

Regardless of the mechanism of action of the therapy and potential adverse effects, there really is no safer anticoagulant for thrombocytopenic patients. All anticoagulants will increase the risk of bleeding, especially at therapeutic doses. After carefully considering the indication and contraindication for continuing anticoagulation, the physician has to decide what is an acceptable risk for bleeding or thromboembolism and discuss the matter with the patient. The decision has to be made based on the individual case.

Answered by:
Dr. Kang Howson-Jan
Dr. Kamilia Rizkalla

22. Inconclusive hepatitis C blood work

What should I do with a hepatitis C blood result that says inconclusive?

Question submitted by:
Dr. Louise Ross
Toronto, Ontario

Serologic tests for antibodies to hepatitis C (HCV) are not always definitive. In some cases, this may be due to early infection and repeating the test a few weeks later can provide a clearly positive result. In other cases, indeterminate results are due to very low levels of the antibody type detected by the assay, or from the presence of interfering substances in the serum. In most cases, the status of the infection can be resolved by testing for HCV DNA in the blood using qualitative polymerase chain reaction (PCR) or other nucleic acid amplification test. The absence of HCV DNA generally indicates that the infection has been cleared, even if antibodies are present. If HVC DNA is not detectable with a positive or equivocal test for anti-HCV antibodies, it is reasonable to repeat the DNA test after six months to verify the result.

Answered by:
Dr. Michael Libman

For more on viral hepatitis, turn to page 59!

The value of screening tonometry

23. Is there value in screening tonometry for a primary care physician?

Question submitted by:
Dr. MI Ravalia
Twillingate, Newfoundland

No. Screening tonometry used to be a favorite diversion for many service clubs, particularly the Lions organization whose primary focus is on prevention of vision loss. Until the past few years, special buses equipped with tonometric equipment would travel rural areas performing tonometry on any individual who presented for the test. A better understanding of glaucoma has shown us that this type of screening misses more cases of glaucoma than it detects.

The normal range of pressure in the healthy human eye is between 10 mmHg and 22 mmHg (there is a significant diurnal variation). It used to be taught that the risk of glaucoma increased once the pressure was above 22 mmHg. Although this still holds true, this concept has been modified by the discovery that an increasing number of patients develop glaucoma at pressures below 22 mmHg. These individuals are classified as having either normal or low pressure glaucoma.

This concept has been modified by the discovery that an increasing number of patients develop glaucoma at pressures below 22 mmHg.

At least 10% of glaucoma patients were thought to be within this normal pressure group. More sophisticated instrumentation, such as Optical Coherence Tomography (OCT) and Heidel-berg Retinal Tomography (HRT) have shown that 50% or more of glaucoma patients are in this range.

A recent Japanese study evaluated 3,021 healthy individuals over the age of 40 in whom approximately 120 (or about four per cent) had evidence of glaucoma. The truly frightening statistic in this group is that 92% of patients who showed signs of glaucoma had pressures below 21 mmHg.

It is my opinion that there is no value in screening tonometry for primary care physicians. Normal intraocular pressure does not eliminate the possibility of glaucoma.

Tonometry is a valuable tool for ophthalmologists who are monitoring the effectiveness of glaucoma therapy. It is one of the aids to establish the diagnosis of glaucoma in conjunction with visual fields, optic nerve head appearance and nerve fibre layer analysis by OCT or HRT. In the light of our present knowledge, tonometry has ceased to be a useful screening tool.

Answered by:
Dr. Malcolm Banks

References
1. Iwase A, Suzuki Y, Araie M, et al: The prevalence of primary open angle glaucoma in Japanese: the Tajimi study. Ophthalology 2004; 111(9): 1641-8.