Answers to your questions from our medical experts

1. Photodynamic Therapy for Acne

Is photodynamic therapy effective for acne?

Submitted by: Anonymous

There are two types of photodynamic therapy (PDT) for acne. One involves using a visible light source alone (often blue light) in which the target chromophore is the porphyrin produced by the *Propionibacterium acnes* bacteria itself.

The second type involves an externally applied agent such as aminolevulinic acid (ALA) which is taken up preferentially in the target organ most responsible for acne, the hyperactive sebaceous glands. The ALA is converted to protoporphyrin IX which acts as the chromophore for red, blue or laser light activation.

An evidence-based review of laser, light sources and PDT for acne vulgaris found the best evidence for PDT with red light activated methyl-ALA and ALA-PDT. In five randomized controlled trials, efficacy ranged from 50% to 60% lasting up to 20 weeks after one to three treatments.

Medical therapy (using oral antibiotics or oral isotretinoin) is still the treatment of choice for moderate to severe inflammatory acne vulgaris. PDT can be considered an adjunct to medical therapy in patients who fail medical therapy, have side-effects of systemic therapy or are slow to respond to treatment.

Resource

1. Haedersdal M, Togsverd-Bo K, Wulf HC: Evidence-Based Review Of Lasers, Light Sources And Photodynamic Therapy In The Treatment Of Acne Vulgaris. J Eur Acad Dermatol Venereol 2008; 22(3):267-78.

Answered by: Dr. Richard Haber

2. Stopping Warfarin for a Major Dental Procedure

If a patient had a pulmonary embolism (PE) and is on warfarin, does it need to be stopped for a major dental procedure?

Submitted by: Anonymous

Patients who discontinue anticoagulation given to treat PE are at risk of recurrent venous thromboembolic event (VTE) (*i.e.*, deep vein thrombosis and PE). The likelihood of recurrent VTE can be separated into high (PE less than three months prior, or underlying severe thrombophilia), moderate (PE within three to 12 months), or low (single prior PE > 12 months without risk factors for recurrence).[1] For a major dental procedure with a risk of bleeding, anticoagulation with warfarin should be stopped five days prior to the procedure. Bridging anticoagulation with therapeutic low molecular weight heparin (LMWH) is recommended for patients in the high or moderate categories above.[1] LMWH is administered until 24 hours prior to the procedure. The last pre-operative dose is administered at 50% of the total daily dose. Anticoagulation with LMWH and warfarin is resumed 24 hours post-operatively and when adequate hemostasis is achieved. LMWH can be discontinued when therapeutic levels of INR are achieved.

Reference

1. Douketis JD, Berger PB, Dunn AS, et al: The Perioperative Management of Antithrombotic Therapy: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). Chest 2008; 133(6 Suppl):299S-339S.

Answered by: Dr. Paul Hernandez

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3. Managing Hyperglycemia in Steroid-Induced Situations

When and how to be managing hyperglycemia in steroid-induced situations?

Submitted by: Darren Cargill, MD, Windsor, Ontario

There is no doubt that corticosteroids may significantly elevate glucose levels in both individuals with diabetes and those known not to have diabetes. There are many factors to consider when managing hyperglycemia in these situations. At times the treatments may be short-term for a few days such as an asthma exacerbation or it could be long-term treatment for many months or longer. The degree of hyperglycemia is also important. Hyperglycemia can be quite severe and symptomatic or can be quite mild. The timing of when the corticosteroid is given and the route of administration is also a factor to consider. For instance, if prednisone is given in the morning, glucose levels rise throughout the day and often peak four to 12 hours later. Alternatively, in hospital hydrocortisone given intravenously every six hours often keeps glucose levels elevated chronically throughout the day and night. Finally the patient's age, condition and comorbidities also need to be taken into consideration.

Targets and treatment need to be individualized. The lowest effective dose for the least amount of time needs to be determined. Insulin is often needed and there are various types of insulin that can be utilized either alone or in combination.

Answered by: Dr. Vincent Woo

4. Rheumatoid Factor vs. Anti-Cyclic Citrullinated Peptide

What is the difference between rheumatoid factor and anti-cyclic citrullinated peptide (anti-CCP)?

Submitted by: Gaetan Lavoie, MD, Sainte-Félicité, Quebec

Rheumatoid factor and anti-CCP are both tests used in the diagnosis of rheumatoid arthritis (RA). Rheumatoid factor is an antibody, usually an IgM, that binds to the constant region of IgG antibodies. The sensitivity of this test is 66% to 85% and its specificity is 72%. The anti-CCP test measures the presence of antibodies against cyclic citrullinated peptides: cyclic peptides containing arginines that have been converted to citrulline. The enzyme peptidyl arginine deiminase converts arginine to citrulline. This test has a sensitivity of 74% and a specificity of 96%. The anti-CCP antibody is gaining popularity as a more specific test for RA and may be associated with a poorer prognosis.

Resource

1. McPherson RA, Pincus MR: Henry's Clinical Diagnosis and Management by Laboratory Methods, 21st ed. W. B. Saunders Company, 2006.

Answered by: Dr. Michael Starr and Dr. Emil Nashi

5. Diagnosing Parkinson's Disease

How to diagnose Parkinson's disease?

Submitted by: Anonymous

The diagnosis of Parkinson's disease is made by history and physical examination. Sometimes the clinical features of Parkinson's disease may be subtle and require a repeat assessment. There are no particular investigations to confirm the diagnosis of Parkinson's disease. CT scan and MRI are usually normal or may show age-associated atrophy. In typical cases imaging may not be required. Patients are considered to have Parkinson's disease by most experts if they have bradykinesia, in the absence of any other attributable cause or features of atypical parkinsonism and at least one of the following signs:

- resting tremor or
- rigidity.

Answered by: Dr. Abdul Qayyum Rana

6. Uric Acid and CVD

What is the concern about uric acid and CVD?

Submitted by: Mona Lee, MD, North Vancouver, British Columbia

Elevated uric acid is associated with increased prevalence of coronary artery disease (CAD). Large epidemiologic studies (National Health and Nutrition Examination Survey I [NHANES I], Framingham) have shown that hyperuricemia is associated with an increased incidence of MI and increased mortality in those with and without pre-existing CAD. It is unclear whether hyperuricemia by itself is a cause of CAD or whether it is simply a marker for other risk factors such as hypertension, dyslipidemia and diabetes. There is a close relationship between hypertension and hyperuricemia even in patients who are not on diuretics.

Hyperuricemia has also been identified as a risk factor for mortality in patients with heart failure, where it may be secondary to decreased renal perfusion and decreased excretion of uric acid. There is no evidence that decreasing uric acid levels with allopurinol decreases the risk of MI.

Answered by: Dr. Bibiana Cujec

7. Seborrheic Dermatitis

What is the best treatment for the removal of seborrheic dermatitis (SD)?

Submitted by: Janna Bentley, MD, Kelowna, British Columbia

SD is a chronic relapsing and remitting condition that responds to both antifungal and anti-inflammatory approaches, but there is no definitive cure.

Since patients will be required to treat and re-treat their lesions, therapies that are well-tolerated are key. Bathing, emollients and mild shampoos can help remove crusts and scales. Avoid use of intense keratolytics, or mechanical removal of scales as they are quite irritating and can aggravate the condition.

Keratolytics commonly used include sulfur, selenium sulfide, tar, salicylic acid and zinc pyrithione shampoos. Shampoos should be used two to three times per week and left on the scalp for at least five minutes before rinsing to ensure scalp penetration.

Low potency topical steroids suppress the inflammation of SD. They have a good rapid effect, especially for itching. For SD on the face, patients can use topical steroids once or twice daily. Patients should be cautioned regarding adverse affects such as steroid rosacea and atrophy or glaucoma and cataracts if used near eyes. Steroid lotions are available for scalp SD and are used two to three times per week.

Topical calcineurin inhibitors (*i.e.*, tacrolimus and pimecrolimus) have anti-inflammatory properties without the adverse effects of topical steroids. However, they are slow to show results (up to a week before resolution becomes apparent).

Antifungals treat SD by decreasing *Malassezia* yeast counts. Many antifungals are effective including: ciclopirox, selenium sulfide, azoles (ketoconazole, fluconazole, *etc.*), terbinafine and lithium gluconate. The azoles represent the largest class of antifungals used in the treatment of SD. Topical azoles (shampoos and creams) are up to 90% effective. They should be used daily until resolution, often within several weeks. Ciclopirox is good for mild to moderate SD. For scalp SD, ketoconazole 2% shampoo used at least twice weekly for two to four weeks is often effective. Patients can be instructed to apply 10 mL of shampoo to a wet scalp, work into a lather and leave on for five minutes before rinsing with water.

Given the dual nature of SD, combining topical steroids/azoles (one dose daily for two weeks) for facial SD may be better than monotherapy.

Patients should be advised that SD requires repetitive treatment usually every two weeks as recurrences often occur at this frequency due to the slow growth of the yeast. Severe cases may require adding an oral antifungal to a topical regimen. Narrow-band UVB phototherapy may also be promising for treatment and prophylaxis of SD.

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

8. Pityriasis Alba vs. Rosea

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

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

Pityriasis alba is a type of post-inflammatory hypopigmentation often associated with atopic dermatitis. It is recognized in children and teens in the summer months, especially in those with darker skin types. Lesions are usually asymptomatic, symmetric, often on the cheeks, poorly-defined hypopigmented macules/patches with a very light scale, if at all. Sometimes lesions can be erythematous before becoming hypopigmented. Emollients, topical steroids and sun avoidance can be helpful.

In contrast, pityriasis rosea (PR) is a common, acute, self-resolving, erythematous, salmon to pink (rosea) eruption with a characteristic scaly (pityriasis means scaly) appearance and course. Patients are often females in their late teens and twenties and eruptions tend to occur in the spring and fall. Human herpes viruses 6 and 7 have been proposed as underlying causes. Recurrences are rare.

PR typically begins with a herald patch followed by the development of widespread lesions along skin tension lines (Langer's lines). On the back, PR classically has a "Christmas tree" or "fir tree" pattern of distribution. There may be small fine scales centrally with a characteristic scale around the margin (a collarette of scale). The vast majority of cases of PR resolve on their own, lasting six to eight weeks. Treatment is mainly symptomatic.

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

9. Hashimoto's Thyroiditis

How often to follow patients with Hashimoto's thyroiditis with lab tests?

Submitted by: Sakina Raj, MD, Calgary, Alberta

Hashimoto's thyroiditis, also known as chronic autoimmune thyroiditis is the most common cause of primary hypothyroidism in the western world. In general, the TSH should be measured at least yearly. It should be measured earlier if a significant change in thyroid symptomatology, on new drug(s) that may interact with l-thyroxine, significant change in health status, at the onset of pregnancy and every trimester and six weeks after a dose change in l-thyroxine.

Answered by: Dr. Ally P. H. Prebtani

10. Syphilis Screening Tests

What syphilis screening (tests) are recommended as baseline tests? If abnormal, what further testing should be done?

Submitted by: Mary McKenzie, MD, Toronto, Ontario

When screening serology is requested for syphilis, every provincial laboratory undertakes a screening test. Should that screening test be reactive, a confirmatory test is performed. The "positivity" of the screening test may wane with the time, but the confirmatory test will always be positive. It is important to perform the confirmatory tests as there are many conditions such as recent vaccinations, systemic lupus erythematosus, leprosy and pregnancy which may produce a false positive screening test. The course of action of how to proceed with a positive screening and positive confirmatory test is based upon whether the patient has ever received treatment for syphilis. If the patient has never received treatment for syphilis then the question, "in which stage of syphilis is the patient?" is raised. It is possible that the patient has late latent syphilis, or potentially even neurosyphilis. To make that determination, however, a lumbar puncture is required and screening of the cerebral spinal fluid (CSF) should be undertaken. If serologic evidence of syphilis is absent in the cerebral spinal fluid, then late latent syphilis is present, while if evidence of exposure to syphilis is found in the CSF, then neurosyphilis is the diagnosis. Treatment recommendations and follow-up for each of the stages of syphilis can be found in the Canadian Guidelines on Sexually Transmitted Infections (2006 Edition) at: http://www.phac-aspc.gc.ca/std-mts/sti-its/guide-lignesdir-eng.php.

Answered by: Dr. John M. Embil

11. Continuation of Clopidogrel After Acute Coronary Syndromes

How long does one continue prescribing clopidogrel after acute coronary syndromes (ACS) and cardiac interventional treatments (stents)?

Submitted by: Brandon Thorpe, MD, Moose Jaw, Saskatchewan

The guidelines for the management of ACS (unstable angina and non-ST elevation MI) and the use of coronary stents is constantly evolving. I urge all physicians to inform themselves on a regular basis by examining the guideline updates that are frequently published. At this time, in patients with ACS, clopidogrel is usually started in the ER in patients with high-risk features (*i.e.*, abnormal cardiac enzymes and electrocardiograms). Clopidogrel is generally continued after the patient is discharged, assuming no allergies, intolerance, or adverse reactions. In a patient who has a coronary stent placed, clopidogrel is continued for at least one month but ideally for at least 12 months (in the case of non-drug-eluting stents) and for a minimum of 12 months (in the case of drug-eluting stents). In patients who do not receive a coronary stent, therapy with clopidogrel should be continued, ideally, for at least 12 months. The prolonged use of clopidogrel in patients with drug-eluting stents is to prevent the potential, although rare, complication of late stent thrombosis.

Answered by: Dr. Richard Sheppard

12. Work-Up Before Starting a Bisphosphonate

Is there any work-up needed before starting a bisphosphonate?

Submitted by: Gilbert Blanchard, MD, Bas-Caraquet, New Brunswick

The primary concern in using bisphosphonates is hypocalcemia. This complication is more likely to occur in patients with decreased renal function and low vitamin D levels. Before starting treatment, serum calcium levels and renal function should be measured and if calcium is low, further investigations such as vitamin D levels can be undertaken. Another complication that has been associated with bisphosphonates is osteonecrosis of the jaw, particularly in cancer patients being treated with bisphosphonates. This complication, although uncommon, often occcurs after a dental procedure. Hence, it is reasonable to recommend that higher risk patients should see a dentist so that any necessary procedures can be carried out before starting the bisphosphonate.

Resource

1. Vahtsevanos K, Kyrgidis A, Verrou E, et al: Longitudinal Cohort Study of Risk Factors in Cancer Patients of Bisphosphonate-Related Osteonecrosis of the Jaw. J Clin Oncol 2009; 27(32):5356-62.

Answered by: Dr. Michael Starr and Dr. Emil Nashi

13. Nasal Spray for Rhinorrhea

Can ipratropium help those who have rhinorrhea when they go outside in very cold weather?

Submitted by: Monique Bourbeau, MD, Boucherville, Quebec

Patients who develop rhinorrhea when they go outside in cold weather have vasomotor rhinitis. Vasomotor rhinitis is an idiopathic non-allergic rhinitis associated with nasal congestion, rhinorrhea and postnasal drip that is not associated with sneezing or nasal itching. The causes of vasomotor rhinitis are unknown but recent studies hypothesize that an imbalance of the parasympathetic and sympathetic neuronal system in nasal vessels and glands cause vasomotor rhinitis. Such dysregulation can be provoked after exposure to chemical irritants (odours, perfumes, smoke, ozone and pollution), psychological stress, alcohol, spicy food, vasoconstrictor nasal spray overuse but particularly by changes of temperature and humidity. Vasomotor rhinitis is common and affects a higher percentage of females. Diagnosis can only be made by exclusion, after other causes have been ruled out.

The cornerstone of treatment is removal and prevention of causing agents. Nasal irrigation with saline drops can be helpful and use of intranasal steroid sprays are also beneficial. Use of ipratropium, an atropine derivative and a muscarinic receptor inhibitor is recommended. Ipratropium inhibits the production of nasal mucus and is simultaneously a short-acting bronchodilator. Surgery, like septo- or turbinoplasty and functional endoscopic sinus surgery to remove polyps or hypertrophic nasal mucosa is only performed in patients when mechanical obstructive tissue is the main cause of vasomotor rhinitis.

Answered by: Dr. Jonathan Irish and Dr. Boban Erovic

14. Best Treatment for Anal Warts

What is the best treatment for anal warts?

Submitted by: Andrew Dworak, MD, Scarborough, Ontario

Anal warts can be treated medically or surgically. It is important when assessing a patient with anal warts to determine if the warts extend into the anal canal as these would not be very accessible to topical therapy and would necessitate a referral to a general or colorectal surgeon for anoscopy and usually surgical treatment with electrodesiccation or CO_2 laser.

Medical therapy would primarily involve the use of topical 5% imiquimod cream, a topical immune stimulating drug or podophyllotoxin, an extract of the mayapple plant that inhibits mitotic division. Podophyllotoxin may induce resolution within one to four weeks, whereas imiquimod often requires three times weekly treatment for up to 12 weeks. Clearance rates with podophyllotoxin have been reported to be up to 60% to 80% after one to four courses and approximately 40% with imiquimod after 12 weeks.

Liquid nitrogen can also be used to treat anal warts and in an open label study of 80 males randomized to imiquimod 5% cream three times weekly for three months or cryotherapy once every three weeks for three sessions, cryotherapy was more effective than imiquimod, although imiquimod was less painful.

CO_2 laser can be very effective in treating anal warts not responding to more conservative therapy but does have a significant risk of scarring and should likely be reserved for anal warts not responding to topical medical therapy or cryotherapy.

A reasonable approach would be to use combination therapy with imiquimod or podophyllotoxin used first to shrink the warts as much as possible followed by laser or electrodesiccation afterwards to try to eliminate the residual warts which should result in lesser amounts of scarring.

Answered by: Dr. Richard Haber

15. EKGs on Relatives of Patients with Wolff-Parkinson-White Syndrome

Should I be performing EKGs on first-degree relatives of patients with Wolff-Parkinson-White (WPW) syndrome (whether symptomatic or asymptomatic)?

Submitted by: Arawn Therrien, MD, Gananoque, Ontario

The prevalence of a WPW pattern on ECG is 0.15% to 0.25% in the general population. The prevalence is increased two- to three-fold to 0.55% among first-degree relatives of affected patients, suggesting a familial component. However, the prevalence remains so low that routine screening of asymptomatic relatives cannot be recommended. Furthermore, it is estimated that only about 2% of patients with ventricular pre-excitation on ECG (WPW pattern with short PR interval < 0.12 sec and delta waves) have WPW syndrome (arrhythmias associated with atrioventricular bypass tract).

Answered by: Dr. Bibiana Cujec

16. Pathophysiology of Panic Attacks

Please explain the pathophysiology of panic attacks.

Submitted by: Lilanie Cooper, MD, Prince Albert, Saskatchewan

The exact pathophysiology of panic attacks is unknown. Panic attacks are manifestations of an underlying anxiety disorder. There is excessive autonomic reaction with hyperactive sympathetic tone and increased release of catecholamines. Panic attacks are speculated to orignate in the amygdala, input to which is modulated by both thalamic and prefrontal projections. Projections from amygdala extend to various areas of the brain such as locus ceruleus, hypothalamus and cortex. This explains why a variety of different agents are panicogenic by acting at different pathways and neurochemical systems.

Answered by: Dr. Abdul Qayyum Rana