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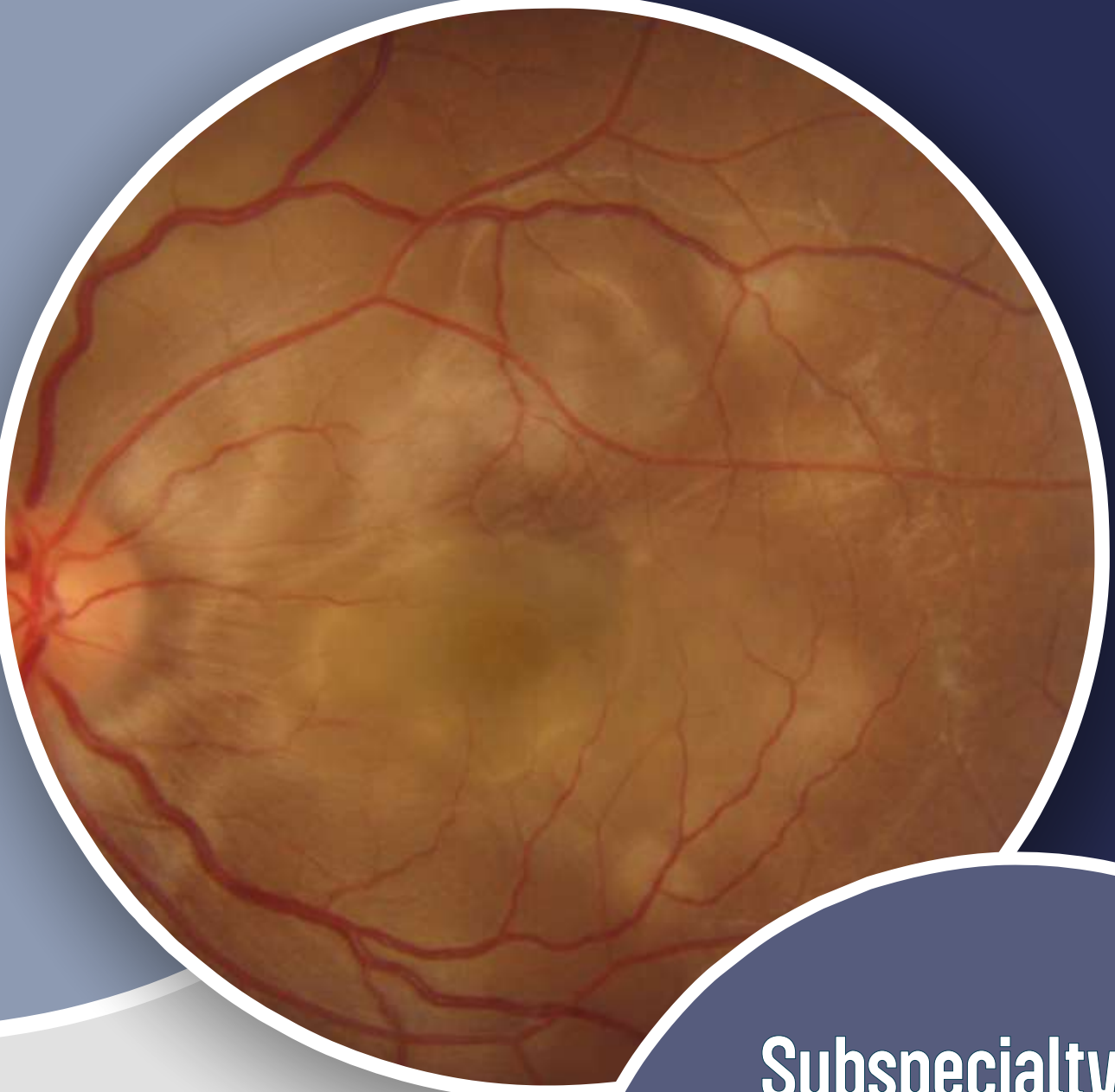

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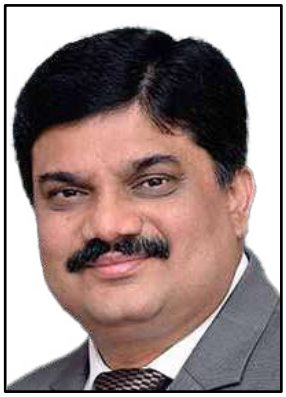

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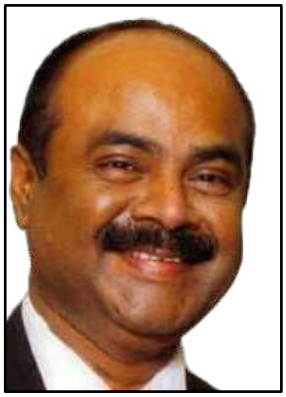

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Different Faces of Epidemic Retinitis / Post fever retinitis: Unravelling Clinical Complexity

Dr Ankush Kawali

Introduction

Epidemic retinitis (ER) or post-fever retinitis presents a diagnostic challenge with its myriad manifestations. This talk explores the various facets of this condition, aiming to enhance clinical understanding and improve patient outcomes.

1. Clinical Presentation

Diagnosis

The diagnosis of ER is based on the typical morphological presentation and the typical history of a recent fever often diagnosed as typhoid or viral fever by their physicians. The presentation is unilateral or bilateral, with "cotton-wool spot-like" non-necrotizing retinitis lesions, at the poster pole, around the disc, or along the arcades. Macular edema with neuro-sensory detachment is common, and resolution may be marked by macular star, fan, or subretinal yellowish precipitates.

2. Etiology and Differential Diagnosis

Etiology

While the etiology remains unproven, associations exist with viruses such as West Nile, Dengue, Chikungunya, and bacterial agents like rickettsial organisms and Salmonella typhi. Differential diagnoses encompass Toxoplasma retinitis, Systemic Lupus Erythematosus, atypical herpetic retinitis, Subacute Sclerosing Panencephalitis associated retinitis, hypertensive/diabetic/mixed retinopathy, and Purtscher's retinopathy.

3. Investigative Approach

Baseline Investigations involves assessing blood pressure, CBC, ESR, CRP, TPHA, HIV, RBS, and an OCT scan.

Etiological Investigations may include Weil-Felix test, blood culture for typhoid, and serology for Chikungunya, Dengue, and West Nile virus aid in identifying potential causative agents.

4. Treatment Strategies

Oral doxycycline, alone or in combination with steroids administered through various routes, has shown a dramatic response. Prompt initiation is crucial to prevent poor visual outcomes.

5. Factors Influencing Visual Outcomes

Delayed doxycycline therapy, steroids without doxycycline cover, diabetic status, delayed presentation, poor initial visual acuity, disc pallor, retinal thinning, subfoveal deposits, and ellipsoid zone loss are factors linked to poor visual outcomes.

6. Complications

Complications include optic disc pallor, vascular occlusion, retinal thinning, and ellipsoid zone loss, potentially contributing to visual field defects despite maintained visual acuity and rarely retinal neovascularization even in the absence of significant capillary non-perfusion area.

7. Conclusion

Understanding the unique presentations, diverse etiological factors, and simplified treatment nuances of epidemic retinitis is crucial for timely diagnosis and effective management. A thorough investigative approach may be needed to uncover the underlying causes.

Key Take-Home Messages

1. Consider epidemic retinitis in patients with recent fever and characteristic retinal lesions.
2. Perform a baseline investigation to guide treatment.
3. Initiate doxycycline promptly to ensure a favourable outcome and prevent complications.
4. Identify factors influencing poor visual outcomes to prognosticate the disease.
5. Timely refer if no improvement is noted with doxycycline therapy within a week.

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Dr Anup Kelgaonkar

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Hypertensive anterior uveitis : current aspect

Dr Jin A Choi

St. Vincent's Hospital, the Catholic university of Korea

Secondary glaucoma in uveitis is distinguished by its episodic and partially iatrogenic nature, leading to comparatively elevated intraocular pressure. Moreover, individuals affected by hypertensive anterior uveitis are typically young and in their working age, experiencing significant debilitation due to the disease. Notably, glaucoma associated with hypertensive anterior uveitis tends to exhibit a more rapid progression than what is observed in primary open-angle glaucoma.

By evaluating the temporal patterns of increased intraocular pressure and inflammation, the mechanism can be categorized into inflammatory ocular hypertension syndrome, acute uveitic angle closure, corticosteroid-induced ocular hypertension, and chronic mixed mechanisms. Of the four mechanisms contributing to ocular hypertension in uveitis, the inflammatory ocular hypertension syndrome is primarily linked to infectious causes, including herpes virus infection, cytomegalovirus infection, toxoplasmosis, syphilis, and others. Among these, cytomegalovirus (CMV) is recognized for being associated with the highest intraocular pressure and an increased need for subsequent glaucoma surgery.

In this presentation, I would like to discuss the clinical characteristics and pathogenesis of hypertensive anterior uveitis, with a particular emphasis on viral etiology.

Milestones in uveitis therapy

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Uveitis remains a diagnostic and therapeutic challenge for ophthalmologists. It may occur due to an infection or may be due to an autoimmune etiology. With the advent of newer drugs and diagnostic methods, management has improved in recent years. There have been breakthroughs in treatment outcomes with novel delivery systems and newer drugs.

Laboratory diagnostic techniques

Though it is often difficult to make a precise etiological diagnosis in certain situations, infective agents need to be identified before giving steroids. Polymerase Chain Reaction (PCR) has emerged as a newer and more effective molecular diagnostic tool in uveitis, especially in cases where early and precise diagnosis can prevent ocular morbidity with appropriate therapy. It has given us an edge over conventional methods like culture and sensitivity owing to its sensitivity, specificity, and rapidity in detecting pathogenic micro-organisms.

Imaging modalities

Newer imaging modalities are available for posterior segment evaluation like swept source OCT, OCT Angiography, and ICG Angiography.

Intraocular injections and implants

The treatment of uveitis has evolved with innovative ocular drug delivery mechanisms. Several sustained-release corticosteroid preparations are available in the form of implants for periocular delivery of drugs in place of repeated injections.

Therapeutic options

Though Corticosteroids remain the mainstay of treatment of uveitis, several drugs are available for the management of non-infectious uveitis including immunosuppressive agents, and more recently biologics Immunosuppressive drugs can be classified as antimetabolites, T cell inhibitors, and alkylating agents. Tuberculosis and HIV need to be ruled out before starting immunosuppressive therapy and blood counts need to be monitored. Familiarity with the usage of immunosuppressive agents has revolutionized the treatment of uveitis.

Biological agents

Biologics have appeared as a useful alternative for difficult-to-treat cases and treatment-refractory uveitis with a favorable safety and efficacy profile. In a country like India, the use of biologics is feared to be more prone to developing infections, thereby limiting its use. In addition affordability and accessibility limit its use in India. Though there is no definite consensus on initiation, dosage, and duration of treatment, biologics have revolutionized the treatment of sight-threatening uveitis and scleritis. As research continues to highlight the mechanisms of intraocular inflammation, further developments in the field of biologics are anticipated.

Conclusion

Uveitis is a potentially sight-threatening disease with significant ocular morbidity. It has undergone rapid growth and refinement over the years. A better understanding of immunology and uveitic diseases helps provide more targeted treatment for uveitis. Biologics have emerged as a new weapon in the armamentarium of management of non-infectious uveitis. With continuing research and innovation, the future holds great promise for uveitis.

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Retinitis in the HIV patient – Step-by-Step Management

Dr Mallika Goyal, MD

Retina-Vitreous & Uveitis Service, Apollo Health City, Hyderabad.

HIV compromises immune system, leading to opportunistic infections in the retina & choroid, which are often manifestations of disseminated disease in AIDS.

Specific manifestations vary depending on the severity of immune compromised status, specifically, CD4+ T lymphocyte counts.

The commonest retinal finding is HIV microvasculopathy or HIV retinopathy, seen in 40-60% patients, as cotton wool spots, retinal hemorrhages, and microaneurysms due to either immune complex deposition, increased plasma viscosity or involvement of endothelium by HIV. Usually seen with CD4 count < 100/uL & does not have visual consequence.

The most common retinal infection is cytomegalovirus (CMV) retinitis & neuroretinitis often associated with CD4 < 200/ uL. Seen as granular retinal necrosis with retinal haemorrhages giving a cottage cheese & ketchup appearance. Without prompt treatment this is often a blinding disease due to extensive retinal & macular necrosis, optic atrophy, and retinal detachment.

Treatment includes intravitreal ganciclovir injections for 4-8 weeks and systemic ganciclovir or valgancyclovir. Foscarnet or cidofovir can be used as alternatives in ganciclovir resistant cases. Long term treatment depends on maintaining improved immune status (CD > 250/uL) with ART.

Progressive outer retinal necrosis (PORN), often bilateral, caused by herpes zoster virus, herpes simplex virus and rarely by CMV affects the deep retinal layers with sparing of retinal vessels causing a"cracked mud" appearance. There is no obvious inflammation. Seen in severely immunosuppressed patients, CD4 generally 20 (often < 120) it causes rapid irreversible vision loss from extensive retinal necrosis and optic atrophy. Treatment requires intravitreal injections & systemic antiviral therapy.

Retinitis in an inflamed eye is associated with higher CD4 counts and may be due to acute retinal necrosis (ARN), toxoplasmosis, tuberculosis, fungal retinitis (aspergillus, candida) syphilis, or cryptococcosis.

Tubercular choroidal granulomas, often multiple & bilateral, are a common cause for severe vision loss; these can often be caused by multi-drug resistant organisms requiring second line ant-tubercular therapy.

Toxoplasma retinochoroiditis in patients with HIV is usually bilateral and multifocal and may be associated with central nervous system (CNS) involvement. Treated with intravitreal cindamycin & systemic therapy.

Pneumocystis carinii choroiditis maybe seen as coin-shaped sub-retinal hypopigmented lesions in a quiet eye and serve to alert one to the possibility of Pneumocystis carinii pneumonia and other disseminated disease. It does not generally cause vision loss and is treated with intravenous pentamidine.

Malignancies such as bilateral HIV related Primary Vitreoretinal Lymphoma (PVRL) occurs in young patients with very low CD4+ T-cell counts. It presents as vitrietis with subretinal or sub-retinal pigment epithelial infiltrates and should be considered in any intermediate uveitis not responding to treatment. CNS involvement is common. Vitreous cytology is the gold standard for diagnosis. Prognosis is poor.

HAART has resulted in improved immune status with a change in the course of opportunistic infections. However, improvement in immunity may be associated with an exaggerated inflammatory response to the infective organism leading to Immune recovery uveitis (IRU), severe intractable cystoid macular edema, epiretinal membranes etc.

Dr Manisha Agarwal

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Childhood Uveitis – 5 differences to remember

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Childhood Uveitis is a unique but common situation faced by a paediatric ophthalmologist and a uveitis specialist. It is unique because it involves certain important differences from uveitis in adulthood. Before we go ahead it is essential to understand the differences between Juvenile Idiopathic Arthritis (JIA) and Juvenile Spondyloarthropathy (JSpA). International League of Associations for Rheumatology (ILAR) classification of juvenile idiopathic arthritis (JIA) does not recognize a specific category for Juvenile Spondyloarthritis (JSpA) patients. Yet, JSpA includes enthesitis-related arthritis (ERA), juvenile psoriatic arthritis (PsA), undifferentiated arthritis (UA), reactive arthritis (ReA), and the arthropathies associated with inflammatory bowel disease (IBD-A). In adults, uveitis is often accompanied with redness, pain and watering and decrease of vision. But childhood uveitis in JIA is known to be silent (in a white eye), anterior and characterized by band-shaped keratopathy (BSK), posterior synechiae and complicated cataracts. However, children with JSpA, are found to have symptomatic acute anterior uveitis with many patients having redness, pain and light sensitivity. While in adult uveitis, initial attacks may be treated with topical or oral steroids with a possibility of a watchful expectancy and a calculated delay in introduction of disease-modifying anti-rheumatic drugs (DMARDs); childhood uveitis especially those in relation to JIA mandate early introduction of DMARDs like Methotrexate and biologics like Adalimumab and other agents. Two ''zero tolerance'' issues that revolve around childhood uveitis; are a zero tolerance for inflammation; also, if uveitis is only limited to anterior segment (to prevent BSK and complicated cataracts); and a zero tolerance for requirement of oral steroids for control of inflammation (to prevent the ill effects of steroids on growth in a child). These ''zero tolerance'' issues make childhood uveitis different from adult uveitis; requiring early introduction of DMARDs and biologics. Finally, NSAIDs in JSpA do not decrease, but rather increase the risk for developing uveitis; and this is important given the fact that many ERA patients are initially treated with NSAID therapy only, and this might require some reconsideration of strategy from all treating clinicians. Finally, when it comes to screening / follow-up; the essential difference in patients with JIA or established childhood uveitis in JIA; is the need for close (3-4 monthly) eye checkups, given its silent / insidious nature.

Infectious retinitis – pattern identification

Dr Mudit Tyagi

Infectious Uveitis can be identified with the help of some characteristic clinical patterns.

The aim of this talk is to learn to identify the clinical patterns of common retinal infections

a) Ocular Syphilis- Classic placoid chorioretinitis , ground glass retinitis and military lesions on retinal evaluation. These lesions on Optical Coherence tomography will show full thickness retinitis lesions and the placoid chorioretinitis will have characteristic nodularity of retinal pigment epithelium

b) Ocular Toxoplasmosis usually presents as unifocal necrotising retinitis along with dense vitritis. OCT can reveal classic adhesions of posterior hyaloid along with full thickness chorioretinitis

c) Similarly viral retinitis like Acute Retinal Necrosis , CMV retinitis and Progressive Outer Retinal necrosis have a specific clinical appearance

d) Clinical examination can also help in identifying endogenous endophthalmitis. Candida infections are known to have a characteristic rain cloud appearance on OCT while aspergillus is known to have a more widespread subretinal and choroidal involvement which can be identified on clinical evaluation.

e) Ocular Tuberculosis can also manifest with clinical patterns which include the classic serpiginous like choroiditis and vasculitis with subvascular pigmentation

The aim of this talk is to learn to identify the clinical patterns of common retinal infections

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Serological testing for infectious uveitis: basic principles

Dr Padmamalini Mahendradas

No Financial Disclosures

1. Antibody Detection: Serological testing in infectious uveitis focuses on identifying antibodies produced in response to specific pathogens like bacteria, viruses, fungi, or parasites that affect the uvea.
   Measurement of intraocular antibody synthesis is an important diagnostic tool, assessed through paired analysis of antibody titers in aqueous and serum samples, referred to as the Goldmann-Witmer coefficient (GWC). A GWC value exceeding one typically indicates specific antibody production within the eye, with a value surpassing four suggesting recent infection. This method, demonstrating local antibody synthesis in the immune-privileged ocular environment, has proven useful in diagnosing various uveitic conditions, including viral infections and toxoplasmosis.
2. Techniques Diversity: Serological testing employs various techniques such as ELISA, IFA, and Western blotting, each offering distinct advantages based on factors like sensitivity, specificity, and availability.
3. Interpretation and Accuracy: Serological test results must be interpreted carefully considering potential false positives and negatives due to cross-reactivity or fluctuations in antibody levels. Combining serological tests with other methods like PCR and intraocular fluid analysis enhances diagnostic accuracy. However, it's crucial to note that antibody detection indirectly signifies the presence of an infectious agent and may be influenced by factors such as the interplay between the infection and the host's immune response, as well as the timing of sample collection.
4. Limitations and Considerations: Despite its usefulness, serological testing may not always identify the causative agent accurately, especially in atypical cases or regions with multiple endemic pathogens. Additionally, the presence of antibodies doesn't confirm active infection, requiring careful clinical correlation.
5. HIV Diagnosis: Initial HIV testing involves enzyme immunoassay for detecting HIV-1 and HIV-2 antibodies, followed by p24 antigen immunoassay for confirmed cases, maintaining sensitivity while minimizing false positives.
   For syphilis, both non-treponemal (e.g., RPR, VDRL) and treponemal tests (e.g., TP-PA, FTA-ABS) are used, with quantitative antibody titers aiding in monitoring disease progression and treatment response.

In summary, a comprehensive diagnostic approach, integrating clinical features with appropriate serological with or without molecular tests, is crucial for accurately diagnosing and managing infectious uveitis. Clinical pearls, illustrated with relevant case examples, will key take-home points during the presentation

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Dr Parthopratim Dutta Majumdar

Five scleritis surprises

Dr Peter McCluskey AO - MBBS, MD, DSc, FRANZCO, FRACS

Director Save Sight Institute, Professor and Chair of Ophthalmology, University of Sydney, Faculty of Medicine and Health, Sydney Australia

The five take home messages from this talk are:

1. rare but important disease
   - Watson's classification – stood test of time
   - clinical assessment critical to make diagnosis

2. up to 50% have associated systemic disease
   - in real world practice it is much lower

3. ↑ risk of systemic disease with ↑ severity of scleritis
   - necrotising scleritis => marker life threatening systemic vasculitis

4. at least 10% infectious – must always consider
   - TB related scleritis common in TB endemic regions

5. Treatment:
   - eye limited or systemic association => same treatment algorithm
   - stepped systemic therapy – IMT & biologics
   - biologics effective therapy - scleritis & systemic disease

Financial Disclosure: Lecture Fees AbbVie

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Adalimumab: the early Australian experience with uveitis

Dr Peter McCluskey AO - MBBS, MD, DSc, FRANZCO, FRACS

Director Save Sight Institute, Professor and Chair of Ophthalmology, University of Sydney, Faculty of Medicine and Health, Sydney Australia

We used data from the Fight Uveitis Blindness! (FUB!) outcomes registry to determine how effective adalimumab is at improving control of vision threatening non-infectious uveitis and how effective it is as a corticosteroid sparing drug.

We identified 261 eyes from 141 patients with uveitis who required treatment with adalimumab, 38% male, 62% female, mean age was 45 years. Around 50% had idiopathic uveitis and 50% had a diagnosable associated disease such as Birdshot chorioretinopathy, Sarcoidosis, Multifocal choroiditis, Ankylosing spondylitis, Vogt-Koyanagi-Harada Syndrome, Juvenile idiopathic arthritis, Behcet disease and Inflammatory bowel disease.

There were large reductions in steroid dose at both the 6-month and 12-month timepoints, and marked improvement in inflammatory signs on adalimumab therapy. Visual acuity stabilised and few patients lost vision after commencing adalimumab. Some patients were able to reduce or stop their conventional immunosuppressive drugs.

Adalimumab has become a valuable drug for those patients with uveitis that cannot be safely controlled with other medications.

Financial Disclosure: Lecture Fees AbbVie

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Dr Reema Bansal

Dr Santanu Mandal

Dr Shourya Azad

Dr Somasheila M.

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What to test and how much to believe: 5 pearls

Dr Soumyava Basu

#1: Why do we investigate uveitis?

A: Many infectious and non-infectious uveitis entities are diagnosed by clinical pattern recognition alone. The four main goals for investigating uveitis are:

1. Rule in/out infection
2. Rule in/out associated systemic disease.
3. Baseline parameters – immune status, fitness for therapy
4. Monitoring treatment response

#2: How do lab investigations influence the diagnosis of uveitis?

A: The purpose of lab investigations is to determine the post-test probability of a particular diagnosis from the pre-test probability of the disease (based on clinical signs, prevalence etc.). Thus, if the pre-test probability of the disease is high, and the test has good sensitivity and specificity (called likelihood ratio), then the post-test probability will also be high when the test is positive. Conversely, if the pre-test probability is low, and more so, if the likelihood ratio of the test is not too good, then even if the test is positive, the post-test probability for the diagnosis (based on the test) will be low.

The post-test probability is also represented as positive predictive value for a positive test and negative predictive value for a negative one.

#3: How does pre-test probability apply to common investigations in uveitis?

A: The following two examples illustrate how pre-test probability works for common diagnostic tests in uveitis. First, consider a 24-year old male with occlusive retinal periphlebitis and subvascular lesions, and a history of recent TB contact. This patient has a high pre-test probability for the retinal vasculitis being of tubercular origin. Here, a positive Mantoux test that has only modest sensitivity and specificity for the diagnosis of ocular TB, will still yield a high post-test probability (positive predictive value) for TB retinal vasculitis.

Conversely, consider that the prevalence (pre-test probability) of rheumatoid arthritis or SLE in any form of adult uveitis is less than 1%. Therefore, a positive rheumatoid factor or ANA test in any uveitis (not scleritis) patient, would mean that the patient has <2.5% or <4.4% chance (post-test probability) respectively, of having true rheumatoid arthritis or SLE. Thus, both these tests have no value in the diagnosis of uveitis, unless the patients have systemic manifestations of these diseases.

#4: What happens if we are strongly suspecting a diagnosis (high pre-test probability) and the test is negative?

A: The scenario described above is called as false omission rate, and typically occurs at very high values of pre-test probability. The reverse scenario (low pre-test probability and positive test) is called as false discovery rate and seen in very low pre-test probabilities. Both the possibilities (uncertainly) should be considered when the result of the diagnostic test does not match the pre-test probability.

#5: When do we perform screening tests in uveitis?

A: Screening tests in irrespective of the type of uveitis should only be done if the following criteria are fulfilled:

i. The disease can present with any form of uveitis.
ii. Need lab tests for diagnosis.
iii. Tests have high sensitivity and specificity.
iv. Treatment is markedly different from other uveitis entities: antibiotic vs anti-inflammatory.

Only two diseases fulfil all the four criteria: syphilis and sarcoidosis. Hence, there is no need to do all tests ('uveitis work-up') in all patients.

Suggested reading:

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Optimising outcomes of cataract surgery in uveitis

Dr Vedhanayaki Rajesh

No financial disclosures

Complicated cataract is one of the common complications of uveitis, which may be either due to uncontrolled inflammation or long-term use of topical / systemic steroids. Management of uveitic cataract lies not only in the proper management of cataract in the intra operative period – but also control of inflammation in the pre and post operative period. Uveitic cataract of different etiologies has to be managed differently. For Example, Fuch's cataract has a good visual potential and less post op inflammation. While on the other hand cataract associated with Behçet's disease has poor visual potential due to concomitant retinal pathology. Three months of quiescence is the thumb rule for both infective and non-infective conditions. Other than routine investigations like biometry, these patients need special investigations like UBM, B scan depending on the type of complication associated with it. We have to continue the concomitant medications like immuno suppressive agents and hike up dose of topical and oral steroid pre operatively as needed. Always pre plan the management of existing complications like posterior synechiae, weak zonules to avoid intra operative surprises. In the bag placement of mono focal hydrophobic IOL is the thumb rule in uveitic cataracts. Post op period can be stormy due to excessive tissue handling intra operatively or due to uveitis as such. Proactively expect such complications and start medications accordingly. There is a misconception that uveitic cataract has poor visual potential but if inflammation is properly managed in peri operative period, the visual outcome is usually good.

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Pattern Identification in Choroiditis

Dr Vijay Pratap Singh Tomar
Ex professor, Regional Institute of Ophthalmology, Sitapur

Choroiditis usually has an insidious onset although it can have an acute presentation too. This vision threatening condition has pathognomonic clinical features identifiable on clinical examination. A detailed history and meticulous clinical evaluation is a must to diagnose the particular clinical entity. Detailed history allows the ophthalmologists to get critical evidence regarding general medical history, travel history, social history, associated medications if received any and family history. These often provide critically useful information regarding the pattern of the disease process.

A meticulous systemic and ophthalmic workup provides the insight regarding the possible etiology. During ocular examination, it should be ascertained that is it posterior uveitis or a case of panuveitis. If it is a case of posterior uveitis, then is this, choroiditis, retinitis or retinochoroiditis. Any associated involvement of optic nerve head and / or the retinal vessels should also be noted as it helps in the diagnosis of the disease. Unilaterality , bilaterality, solitary or multifocal nature of lesions provides very important clues in clinching the diagnosis. Presence of anterior chamber inflammation, vitritis or complications should also be evaluated carefully. Any presence of systemic clinical features should also be evaluated as a number of choroidal diseases are associated with systemic manifestations. It should also be checked that the clinical picture fits into any known infective or non-infective entity.

Answers of the above mentioned set of questions paves the way for an accurate diagnosis and management of choroidal inflammatory entities.
No financial interest.

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Dr Vishali Gupta