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Tropical Diseases Conference 2019: Tuberculosis and its management: Challenges in ophthalmology - Rubeena N Shaffi- Cork University Hospital, Ireland

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Purpose: To highlight the diversity of clinical presentation of ocular tuberculosis in a non-endemic setting and discuss an effective approach towards its diagnosis and management. Also to emphasize on close monitoring of patients as anti-tuberculous treatment itself can further complicate and prolong the course of the disease due to its ocular and extraocular complications. Method: Descriptive Case Series.

Tuberculosis (TB) is an infectious disease usually caused by the bacteria Mycobacterium tuberculosis (MTB). Tuberculosis usually affects the lungs but other parts of the body may also be affected. Most diseases do not exhibit any symptoms, in which case they are considered latent tuberculosis.Approximately 10 per cent of latent infections develop to an active disease that kills about half of those infected if left untreated. A chronic cough with blood-containing mucus, nausea, night sweats, and weight loss are the main signs of active TB; Regardless of the weight loss, it was traditionally called "consumption" Certain organ infection can cause a large variety of symptoms.As people who have active TB in their lungs cough, spit, speak or sneeze, tuberculosis is transmitted through the air from one person to the next. People with latent TB will not get the disease spreading. For people with HIV / AIDS and others who smoke, persistent infection happens more frequently.Diagnosis of active TB is based on X-rays in the abdomen, as well as microscopic examination and body fluid culture. Latent TB diagnosis is based on a tuberculin skin test (TST) or blood test.Preventing TB requires screening people at high risk, early diagnosis and case management, and vaccination with the Calmette-Guérin (BCG) bacillus vaccine. High-risk populations include the family, workplace, and social networks of those with active TB.Treatment requires the long term use of multiple antibiotics. Antibiotic resistance is a growing issue with increasing levels of multiple drug-resistant tuberculosis (MDR-TB) and tuberculosis that is extremely drug-resistant (XDR-TB).The normal "short" course treatment for TB isoniazid (together with pyridoxal phosphate to obviate isoniazid-caused peripheral neuropathy), rifampicin (also known as rifampin in the United States), pyrazinamide, and ethambutol for two months, then isoniazid and rifampicin alone for another four months. After six months the patient is considered free of live bacteria.The normal treatment for latent tuberculosis is six to nine months of daily isoniazid alone or three months of weekly (12 doses total) isoniazid / rifapentine combination. If the organism is considered to be completely susceptible, then isoniazid, rifampicin, and pyrazinamide are treated for two months , followed by isoniazid and rifampicin for four months. They don't need to use ethambutol.

First-line anti-tuberculosis drug names are also recalled with the mnemonic "RIPE," which refers to the use of rifamycin (like rifampin), isoniazid, pyrazinamide, and ethambutol. American usage uses abbreviations and terms that are not convoked internationally: rifampicin is called rifampin and abbreviated RIF; streptomycin is abbreviated STM.The second line medications (WHO classes 2, 3 and 4) are mainly used to treat diseases that are resistant to first line therapy (i.e., tuberculosis with severe drug resistance (XDR-TB) or tuberculosis with multidrug resistance (MDR-TB)).For one of three possible reasons, a drug may be classified as second-line rather than first-line: it may be less effective than first-line drugs (e.g., p-aminosalicylic acid); or it may have toxic side effects (e.g., cycloserin); or it may be effective but not available in many developing countries (e.g., fluoroquinolones):Tuberculosis has been treated for 50 years with a combined therapy. Drugs are not used individually (with the exception of latent TB or chemoprophylaxis), and regimens that use only single drugs lead to rapid development of resistance and failure in treatment. The justification for using several medications to treat TB is largely dependent on chance.Tuberculosis may affect the central nervous system (meninges, brain or spinal cord), in which case it is referred to as TB meningitis, TB cerebritis and TB myelitis, respectively; normal treatment is 12 months of drugs (2HREZ/10HR) and steroid is mandatory.Diagnosis is complicated since the culture of CSF in fewer than half of cases is positive and thus a significant proportion of cases are handled on the basis of clinical suspicion. CSF PCR does not increase the microbiology yield significantly; culture remains the most sensitive method and a minimum of 5 ml (preferably 20 ml) of CSF should be sent for

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review.While meningitis of TB and cerebritis of TB are listed together, many clinicians find that their development and reaction to treatment is not the same. TB meningitis typically responds well to therapy, but TB cerebritis may require prolonged therapy) and sometimes prolongs the course of steroids. TB cerebritis also requires regular CT or MRI I m a, unlike TB meningitis. For peritonitis, miliary disease, tubercular osteomyelitis, TB osteomyelitis, laryngeal TB, lymphadenitis, and genitourinary disease, steroids may be helpful, but evidence is scarce and regular use of steroids can not be recommended. The attending physician will administer steroid medication in these cases on a case-by - case basis. Long term effect of pleural tuberculosis on respiratory.

Results: Three cases of varied presentation of ocular tuberculosis and one case of extrapulmonary TB associated with ocular complications due to treatment were diagnosed over a period of eight months at Dept. of Ophthalmology, CUH, Cork. Presentations included recurrent blephroconjunctivitis with chlazion, recurrent granulomatous anterior and posterior uveitis, choroidal tuberculoma, recurrent vitreous haemorrhage and pan uveitis. All patients had normal X-ray chest and negative Tuberculin Skin test (Monteux). Diagnoses were presumptive and assisted with positive Interferon Gamma Release Assay (IGRA); Quantiferon. Complications associated with treatment of tuberculosis included optic neuritis, ocular cranial nerve palsy and extra ocular complications including worsening liver functions.

Conclusion: A high index of suspicion helps diagnosis of ocular TB in areas of low-prevalence of the disease. It forms part of differential diagnosis of chronic, recurrent blephroconjunctivits and uveitis especially in at-risk patients. Anti-tuberculous treatment seems highly effective, yet close monitoring is important to pinch up treatment related complications early on, a prompt referral to the related medical specialities can lead to favourable outcome without prolonging course of the disease.

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