Intraocular Tuberculosis – An Update

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The World Health Organization (WHO) has declared ocular tuberculosis as a global emergency as it remains the most common single cause for morbidity and mortality worldwide, causing nearly 3 million deaths each year. Intraocular tuberculosis represents an extra pulmonary form of tuberculosis. The proportion of cases with extra pulmonary form of tuberculosis has increased in the recent years in immunocompromised individuals.

The lack of an uniform diagnostic criteria for intraocular tuberculosis in both immuno compromised and immunocompetent individual has contributed to the confusion regarding diagnosis and management. However recent studies addressing the clinical significance of purified protein derivative test results, computerized tomography of the chest and molecular diagnostic procedures have provided a new insight into the diagnosis and management of ocular TB.

This review article on ocular tuberculosis was published a decade after the previous major review. This article focuses on diagnostic modalities and criteria, various clinical features, and treatment recommendations. The spectrum of clinical manifestation of ocular tuberculosis, manifestations in AIDS patients and management of drug resistant tuberculosis is addressed in this review. An analysis of the clinical presentations in 158 patients of ocular tuberculosis between 1994 and 2004 showed that 66 (42 %) had posterior uveitis, 57 (36 %) anterior uveitis, 18 (11 %) panuveitis, 17 (11%) intermediate uveitis. The authors have published data on ocular imaging studies carried out on these patients. Fluorescein angiography was the most commonly used imaging technique, however other modalities which were also helpful in the diagnosis includes ICG angiography, OCT, USG and ultrasound biomicroscopy.

Drug resistance for ocular tuberculosis described in this article are similar to those for pulmonary and extra pulmonary tuberculosis and a complete 4 drug regimen should be given because of concerns of developing drug resistance.
A Randomised Trial Comparing Intravitreal Triamcinolone Acetonide and Focal/Grid Laser Photocoagulation for Diabetic Macular Edema

Diabetic Retinopathy Clinical Research Network
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The paper published in the Ophthalmology journal presents the results of a multicentre randomized clinical trial to evaluate the efficacy and safety of 1mg and 4 mg doses of preservative free intravitreal triamcinolone acetonide in comparison with focal/grid photocoagulation for the treatment of diabetic macular edema.

The participants were 844 study eyes of 693 subjects with DME involving the fovea and with a visual acuity of 20/40 to 20/320.

Eyes were randomized to focal/grid laser photocoagulation (n=330), 1 mg of intravitreal triamcinolone acetonide (n=256) or 4 mg intravitreal triamcinolone acetonide (n=254). Retreatment was given for persistent or new edema at 4 months intervals. The primary outcome was evaluated at 2 years.

Visual acuity measured with the electronic Early Treatment Diabetic Retinopathy Study method (primary), optical coherence tomography-measured retinal thickness (secondary), and safety.

At 4 months, mean visual acuity was better in the 4 mg triamcinolone group than in either the laser group (P<0.001) or the 1mg triamcinolone group (P=0.001). By 1 year, there were no significant differences among groups in mean visual acuity. At the 16-month visit and extending through the primary outcome visit at 2 years, mean visual acuity was better in the laser group than in the other 2 groups (at 2 years, P=0.02 comparing the laser and 1mg groups, P=0.002 comparing the laser and 4-mg groups, and p+0.49 comparing the 1mg and 4-mg groups). Treatment group differences in the visual acuity outcome could not be attributed solely to cataract formation. Optical coherence tomography results generally paralleled the visual acuity results. Intraocular pressure increased from baseline by 10 mm Hg or more at any visit in 4 %, 16 %, and 33 % of eyes in the 3 treatment groups, respectively, and cataract surgery was performed in 13 %, 23 % and 51% of eyes in the 3 treatment groups, respectively.

Over a 2-year period, focal/grid photocoagulation is more effective and has fewer side effects than 1-mg or 4-mg doses of preservative-free intravitreal triamcinolone for most patients with DME who have characteristics similar to the cohort in this clinical trial. The results of this study also support that focal/grid photocoagulation currently should be the benchmark against which other treatments are compared in clinical trials of DME.