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***Corresponding author:**
Dr. Manpreet Kour
Junior Resident, Department of Ophthalmology, Government Medical College Jammu-180001, J & K, India
Email: mkour5721@gmail.com

Presumed tubercular uveitis in adults: An observational study

Vijayta Gupta[1], Manpreet Kour[2]

1 *Senior Resident, Department of Ophthalmology, Government Medical College Jammu-180001, J & K, India*
2 *Junior Resident, Department of Ophthalmology, Government Medical College Jammu-180001, J & K, India*

Abstract

Introduction: To study the incidence and outcome of presumed tubercular uveitis in tertiary care center in North India. **Methodology:** This observational study was conducted in the department of ophthalmology, Government Medical College, over a period of 1 year from October 2017 to September 2018. All patients with Uveitis were eligible for study. Presumed tubercular uveitis was diagnosed based upon the diagnostic criteria. All patients with presumed tuberculosis were started on of anti-tubercular (ATT) drugs. Patients were again examined after completing tubercular therapy. **Results:** Total of 250 patients were evaluated for uveitis over a period of 1 year. A total of 18 (7.2%) patients were diagnosed to be presumed tubercular uveitis. Mean age of presentation was 35.6 years (range 13 years to 68 years). Among them 11 were males and 7 were females. Anterior uveitis was the commonest presentation was seen in 9 (50%) patients, posterior uveitus in four (22.2%), panuveitus in 3 (16.6%) and intermediate uveitus in one (5.5) patient. Complete follow-up as per protocol mention above could be ensured only in 13 patients. Out of 13 patients, 11 showed complete remissions and two patients had treatment failure. Two patients showed treatment failure. Both these patients had panuveitis. **Conclusion:** Tubercular uveitis is a rare extrapulmonary complication of tuberculosis. It is still an important cause of uveitis. The response to antitubercular drugs is very good intubercular uveitis.

Keywords: Uveitis, Presumed tubercular uveitis, Tuberculosis, Extrapulmonary tuberculosis.

INTRODUCTION

As per the Global TB report 2017 the estimated incidence of TB in India was approximately 28,00,000 accounting for about a quarter of the world's TB cases. Eye has been one of the extrapulmonary organs, which is involved in tuberculosis, though the incidence is rare. In retrospective review of 10,000 pulmonary tuberculosis patient, the ocular tuberculosis was found in 1.4% [1]. In incidence of tuberculosis a cause of uveitis has decrease over last 5 decades. Wood et al reported, from 1940 to 1960 the proportion of patient with tuberculosis as a cause of granulomatous uveitis decrease from 80% to 20% [2]. Studies from all over the world have reported a varied incidence from 0.3% to 11.4% [3-9]. Incidence is higher where tuberculosis is endemic. Moreover, the criteria used to diagnosed tubercular unveitis were different. This is because it is very difficult to get a tissue diagnosis in eye. Gupta *et al* have tried to standardize the criteria for diagnosis of tubercular uveitis [10]. Using criteria we tried to evaluate the presumed tubercular uveitis in northern Part of India.

METHODOLOGY

This observational study was conducted in the department of ophthalmology, Government Medical College, over a period of 1 year from October 2017 to September 2018. All patients with Uveitis were eligible for study. Uveitis was diagnosed and classified based upon the criteria laid by Jabs et al. (Standardization of Uveitis Nomenclature working group SUN) [11] Complete ophthalmological and systemic examination was done. All patients were evaluated for signs of ocular uveitis:

1. Anterior uveitis: Granulomatous, non-granulomatous, iris nodules, ciliary body tuberculoma
2. Intermediate uveitis: Granulomatous, non-granulomatous with organizing exudates in the pars lana/ peripheral uvea
3. Posterior and panuveitis: Choroidal tubercle, Choroidal tuberculoma, Subretinal abscess, Serpiginous-like choroiditis

Presumed tubercular uveitis was diagnosed based upon the diagnostic criteria laid down by Gupta *et al*. [10]. Patients with presumed tubercular uveitis were evaluated for systemic tuberculosis by means:

1. Positive Mantoux reaction.

2. Evidence of healed or active tubercular lesion on radiography of the chest.

3. Evidence of confirmed active extrapulmonary tuberculosis (either by microscopic examination or by culture of the affected tissue for M. tuberculosis).

All patients with presumed tuberculosis were started on of anti-tubercular (ATT) drugs. (based upon Index T.B guidelines) [12]. Patients were again examined after completing tubercular therapy. Response to treatment was defined as (based upon Index T.B guidelines) [12].

1. Remission: Inactive disease for at least 3 months after discontinuing all therapy based on the Standardization of Uveitis Nomenclature recommendations [11].

2. Treatment failure: No decrease in inflammation, or less than a two-step decrease in level of inflammation after 3 months of ATT.

3. Relapse: An increase in the level of inflammation after complete remission (at least two-step increase).

All data was entered in a pre-structured performa. Data analysis was done using IBM-SPSS v.20 and Microsoft Excel.

RESULTS

Total of 250 patients were evaluated for uveitis over a period of 1 year. A total of 18 (7.2%) patients were diagnosed to be presumed tubercular uveitis. Mean age of presentation was 35.6 years (range 13 years to 68 years). Among them 11 were males and 7 were females.

Anterior uveitis was the commonest presentation was seen in 9 (50%) patients, posterior uveitus in four (22.2%), panuveitus in 3 (16.6%) and intermediate uveitus in one (5.5) patient.

Two patients had active pulmonary disease and 5 had non ocular extrapulmonary (three with tubercular lymphadenitis, one with abdominal tuberculosis and one with spinal tuberculosis). 5 patient did not have active systemic tuberculosis but diagnosed on the basis of positive Mantoux test (>10mm reaction at 72 hours of inoculation). Six patients were referred from the Department of Medicine with presumptive diagnosis of sputum negative clinical pulmonary tuberculosis (based upon the Chest X-ray findings).

Anti-tubercular drugs were started in all the patients. Complete follow-up as per protocol mention above could be ensured only in 13 patients. There patient came for follow-up till completion of intensive phase of ATT. In two patients, ATT was started but did not turn up for follow up.

Out of 13 patients, 11 showed complete remissions and two patients had treatment failure. Two patients showed treatment failure. Both these patients had panuveitis.

DISCUSSION

The tubercular uveitis, though rare, can occur as a manifestation of extrapulmonary tuberculosis. The proportion of patients with tuberculosis as a cause of unveitis has been variable worldwide: 0.3% to 11.4% [3-9]. In an endemic country like India, there have been few studies available evaluating the problem [7, 13-15]. The overall proportion of tuberculosis as a cause of uveitis in our study was 7.2%. In other studies from India, the incidence has been reported between 10.1-22.7 %. (see Table 1) This variation could be from the fact that, our sample size was small as compared to other studies. Overall, the incidence of tubercular uveitis is increasing from 0.6% in a study from Biswas et al to 22.7% in a study by Dogra et al. This increased incidence could be due availability of molecular methods of diagnosing tuberculosis, standardization of diagnostic criteria and reemergence of tuberculosis and coinfection with HIV.

Table 1: Indian studies comparing the incidence of tubercular uveitis

Type of tubercular uveitis	Present study	Dogra *et al.* [15]	Das *et al* [14]	Singh *et al* [7]	Biswas *et al.* [13]
Anterior	9	31	2	48	2
Intermediate	1	88	17	8	-
Posterior	4	229	21	22	1
Panuveitus	3	90	19	47	-
Total	18/250 (7.2%)	438/1912 (22.9)	59/343 (17.2%)	125/1233 (10.1%)	3/465 (0.6%)

Anterior uveitis was the commonest tubercular uveitis in our study consisting of 50% patients. In other studies from India, Posterior and panuveitis is the common cause. (See Table 1). The reason for this diaparity is not known.

Eleven out of 13 patients showed complete remission (84.6%). In a large retrospective study by Aggrawal *et al* in 801 patients the treatment success rate observed was 87.2% [16]. Furthermore, the two patients who had treatment failure had panuvietis. Study by Aggrawal *et al* had shown that patients with panuveitis having vitreous and choroidal involvement had a higher risk of treatment failure. This could only be further validated on large prospective trials.

Our study had strength at it was a prospective study. The other epidemiological studies were retrospectively. Moreover, we have described the outcome of the patients with presume tubercular uveitis. Our study had some limitations, we could not establish a definitive diagnosis of tubercular uveitis due to lack of tissue diagnosis. The lost to followup rate in our study was 27.7% which is on the higher side [17].

CONCLUSION

Tubercular uveitis is a rare extrapulmonary complication of tuberculosis. It is still an important cause of uveitis. The response to antitubercular drugs is very good intubercular uveitis.

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Conflict of interest

The authors declare that there is no conflict of interest.

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