



ORIGINAL RESEARCH PAPER

Ophthalmology

"MANTOUX TESTING IN UVEITIS PATIENTS AND TREATMENT OF PRESUMED INTRAOCULAR TUBERCULOSIS IN WESTERN UP"

KEY WORDS: Posterior uveites, Montoux test, Flourescein angiography, Optical coherence topography

Dr. Jaishree Dwivedi*	M.S Assistant Professor Upgraded Department Of Ophthalmology L.L.R.M. Medical College, Meerut. *Corresponding Author
Dr. Sandeep Mithal	M.S Professor Upgraded Department Of Ophthalmology L.L.R.M. Medical College, Meerut
Dr. Santosh	M.D Assistant Professor, Department Of Tb & Chest, L.L.R.M. Medical College, Meerut
Dr. Ganesh Singh	Assistant Professor (statistician) PSM Department L.L.R.M. Medical College, Meerut

ABSTRACT

Tuberculosis is re-emerging as a global health problem. It is a slowly progressive, chronic, granulomatous infection caused by M. tuberculosis which usually affects lungs, but can also affect other organs like CVS, GI, CNS, SKIN and EYES. Choroidal tubercles and tuberculomas are reported to be the most common intraocular manifestations of TB and the most common intraocular clinical presentation appears to be posterior uveitis.

The diagnosis of ocular TB is considered in settings of-

1. Isolation of M. tuberculosis from ocular fluids or tissue specimen. By a microbiological or histopathological study, PCR.
2. As presumed ocular disease suggestive of TB with proven systemic active disease.
3. Presumed ocular disease without evidence of active systemic disease.

Diagnostic Criteria For Presumed Intraocular Tb Uveitis were.

1. Ocular findings consistent with possible intraocular TB with no other cause of uveitis suggested by history of symptoms, or ancillary testings.
2. Strongly positive MANTOUX OR TUBERCULIN SKIN TESTING (> 10 mm area of induration/necrosis)
3. Response to anti tubercular therapy with absence of recurrences.

The aims of our study were to evaluate prevalence of Mantoux positive in newly referred uveitis patients in whom systemic evaluation was performed and to assess the outcome of treatment for presumed intraocular tuberculosis in selected patients.

MATERIAL AND METHOD The study was conducted in the Retina Clinic at Upgraded department of Ophthalmology, LLRM medical college, Meerut, India. It was a prospective, non comparative, interventional case series.

Patients of ocular inflammation referred to Retina Clinic who underwent systemic evaluation were included in the study

A total of patients who satisfy the inclusion criteria , underwent systemic evaluation which include blood tests, chest radiograph, and tuberculin skin testing (0.05 _g purified protein derivative in 0.1 ml, equivalent to 2.5 tuberculin units) Both erythema and induration was measured at 48 hours, and the result were judged to be positive if induration was more than 10 mm

Antituberculosis therapy i.e isoniazid 300 mg /day, rifampin 600 mg /day, ethambutol 15 mg /kg /day, and pyrazinamide 25–30 mg /kg/ day for the first 2 months ,thereafter rifampin and isoniazid were used for another 4–7 months was initiated for patients who had clinical findings consistent with possible intraocular tuberculosis, a positive tuberculin skin test result

Response to therapy was assessed in terms of increase or decrease or resolution

OBSERVATION AND RESULT Of the total 32 patients 9 patients have positive tubercular contact history and 30 patients were mantoux positive. (94%), of which 78% have their induration size of > 15 mm and 8 patients have positive x-ray findings. (25%)

Out of these 32 patients, 25 received antituberculous therapy for 9 months. In addition all of these patients also received systemic prednisone (1 mg /kg /day) until a clinical effect was seen and then a slow reduction of dose was done.

7 patients were dropped out from the study.

Out of these 25 patients which were started on treatment, 24 patients (96%) showed improvement in their clinical status, 19 patients (76%) showed improvement in their visual acuity after treatment and 35.6 % patients attained visual acuity of 6/9 or better.

CONCLUSION Treatment with antitubercular therapy combined with systemic corticosteroids induces resolution of inflammation with no recurrences. So, mantoux testing should remain an integral part of the systemic work-up for uveitis patients.

INTRODUCTION

Tuberculosis is re-emerging as a global health problem. It is a slowly progressive, chronic, granulomatous infection caused by M. tuberculosis which usually affects lungs, but can also affect other organs like CVS, GI, CNS, SKIN and EYES.^{1,2,3}

Clinical manifestations of intraocular TB are

- Phlyctenular conjunctivitis (20%)
- Acute anterior uveitis (36%)
- Chronic granulomatous anterior uveitis (17.9%)
- Intermediate uveitis (11%)
- Vitritis (71.2%)
- Retinal vasulitis (35.6%)
- Neuroretinitis
- Solitary or multiple choroidal tubercles (28%)
- Subretinal abscess,
- Endophthalmitis and panophthalmitis. (11%)

The diagnosis of ocular TB is considered in settings of-

1. Isolation of M. tuberculosis from ocular fluids or tissue specimen. By a microbiological or histopathological study, PCR.
2. As presumed ocular disease suggestive of TB with proven systemic active disease.
3. Presumed ocular disease without evidence of active systemic disease²

DIAGNOSTIC CRITERIA FOR PRESUMED INTRAOCULAR TB UVEITIS were^{2,4,5,7}

1. Ocular findings consistent with possible intraocular TB with no other cause of uveitis suggested by history of symptoms, or ancillary testing.
2. Strongly positive MANTOUX OR TUBERCULIN SKIN TESTING (> 10 mm area of induration/necrosis)
3. Response to anti tubercular therapy with absence of recurrences.

The standard testing consists of an intradermal injection of 5 tuberculin unit to raise a wheal of 6-10 mm diameter .After 48-72hrs, any induration is measured in mm transversely on the skin at the point of injection.

- An induration of <5mm =considered NEGATIVE.
- An induration of 5-10 mm = considered positive in immunosuppressed patient, with history of contact with active TB patient, or those with healed TB lesion on chest radiography
- An induration of >10mm = considered POSITIVE for those in high endemic area or patients with history of contact with tubercular patient.
- An induration of >15mm=considered POSITIVE in all patients.

AIMS AND OBJECTIVES

1. To evaluate prevalence of Mantoux positive in newly referred uveitis patients in whom systemic evaluation was performed.
2. To assess the outcome of treatment for presumed intraocular tuberculosis in selected patients.

MATERIALS AND METHODS

The proposed study was conducted in the Retina Clinic at Upgraded department of Ophthalmology, LLRM medical college, Meerut, India for a period of 1 year during 2018-19.

- A prospective, non comparative, interventional case series.
- Patients of ocular inflammation referred to Retina Clinic who underwent systemic evaluation.
- Currently on treatment of anti tubercular therapy
- Non tubercular infectious etiology
- A total of patients, who satisfy the inclusion criteria, underwent systemic evaluation.

Systemic evaluation included were blood tests chest radiograph, and tuberculin skin testing (0.05 _g purified protein derivative in 0.1 ml, equivalent to 2.5 tuberculin units) Both erythema and induration was measured at 48 hours, judged to be positive if induration was more than 10 mm.

Antituberculosis therapy was initiated for patients who had clinical findings consistent with possible intraocular tuberculosis, a positive tuberculin skin test result, and no other cause suggested by history, symptoms, or ancillary testing followed by oral steroids with or without topical steroids for anterior uveitis.

OBSERVATIONS

The present study included 32 patients. Out of which females (59%) were more than males (41%).

Table-1

SEX	NO. OF PATIENTS	Percentage
FEMALE	19	59.38%
MALE	13	40.63%
Total	32	100.00%

Most were in the age group 31 to 40 years. (31%)

Table - 2

AGE GROUP	NO. OF PATIENTS	Percentage
0-10	0	0%
11 – 20	7	21.88%
21 – 30	6	18.75%
31 – 40	10	31.25%
41 – 50	4	12.50%
51 – 60	4	12.50%
>60	1	3.13%
Total	32	100.00%

Majority of them were housewives (40%) in terms of occupation. 53% were with bilateral presentation.

Table -3

LATERALITY	NO. OF PATIENTS	Percentage
Both Eye	17	53.13%
Left Eye	8	25.00%
Right Eye	7	21.88%
Total	32	100.00%

Clinical presentation of ocular TB were as follows

Table - 4

CLINICAL FINDING	NUMBER OF EYES	PERCENTAGE
ANTERIOR UVEITIS	10	20.41%
PARS PLANITIS	2	4.1%
VITRITIS	6	12.2%
VITREOUS HEMORRHAGE	3	6.1%
VASCULITIS	7	14.3%
PAPILLOPHELEBITIS	1	2.04%
MACULAR EDEMA	3	6.1%
CHOROIDITIS	10	20.41%
PANUVEITIS	7	14.2%
TOTAL	49 EYES	100%

Of the total 32 patients 9 patients have positive tubercular contact history and 30 patients were mantoux positive. (94%), of which 78% have their induration size of >15 mm and 8 patients have positive x-ray findings. (25%)

Table -5

	NO. OF PATIENTS	PERCENTAGE
MANTOUX POSITIVE	30	93.75%
MANTOUX NEGATIVE	2	6.25%
Total	32	100.00%

Out of these 32 patients, 25 received antituberculous therapy for 9 months. In addition all of these patients also received systemic prednisone (1 mg /kg /day) until a clinical effect was seen and then a slow reduction of dose was done.

7 patients were dropped out from the study, out of which 3 were lost to follow , 2 were mantoux negative , 1 was defaulter, and 1 responded well to topical steroids alone.

Out of these 25 patients which were started on treatment, 24 patients (96%) showed improvement in their clinical status, 19 patients (76%) showed improvement in their visual acuity after treatment and 35.6 % patients attained visual acuity of 6/9 or better.

Table -6

OUTCOME IN PATIENTS ON TREATMENT IN TERMS OF VISION.	NO. OF PATIENTS	Percent age
IMPROVEMENT	19	76%
NO CHANGE IN VISION	5	20%
WORSENING	1	4%
Total	25	100%

CONCLUSION

In our study ,most common presentation was anterior uveitis (20.41%) and choroiditis (20.41%), followed by vasculitis (14.3%) and panuveitis (14.3%), followed by vitritis (12.2%), and other presentation were vitreous hemorrhage , macular edema and papillophlebitis.

In our study, out of 32 patients who underwent systemic evaluation for uveitis, 30 patients (94%) were mantoux positive and these were started with anti tubercular therapy and out of these patients, 96% showed resolution of inflammation after treatment, 76% patients got improved in terms of visual acuity and 35.6% patients attain visual acuity of 6/9 or better.

Hence, we conclude in our study that mantoux testing should remain an integral part of the systemic work-up for uveitis patients.

REFERENCES

1. Henderly DE, Genstler AJ, Smith RE, Rao NA. Changing pattern of uveitis, *Am J Ophthalmol* 1987;131-6
2. Rosen PH, Spalton DJ, Graham EM. Intraocular tuberculosis. *Eye* 1990; 4:486-92.
3. Helm CJ, Holland GN. Ocular tuberculosis. *Surv Ophthalmol* 1993;38:229-56.
4. Sheu SJ, Shyu JS, Chen LM, Chen YY, Chirn SC, Wang JS. Ocular manifestations of tuberculosis. *Ophthalmology* 2001;108:1580-5
5. Sakai JI, Matsuzawa S, Usai M, Yano I. New diagnostic approach for ocular tuberculosis by EISA using the cord factor as antigen. *Br J Ophthalmol* 2001 ;85:130-3
6. Gupta A, Gupta V, Arora S, Dogra MR, Bambery P. Pcr positive tubercular retinal vasculitis :clinical characteristics and management . *Retina* 2001;21:435-44
7. Morimura Y, Okada AA, Kawahara S, Miyomoto Y, Kawai S, Hirakata A, et al. Tuberculin skin testing in uveitis patients and treatment of presumed intraocular tuberculosis in japan. *Ophthalmology* 2002;109:851-7