

UVEITIS PROFILE AMONG PATIENTS WITH TUBERCULOSIS AT KING HUSSEIN
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ABSTRACT

Aim: to report the patterns of uveitis caused by TB. **Method:** This retrospective study was conducted at the ophthalmology clinic in King Hussein Medical Center between January 2023 and February 2024. All patients who have uveitis and, on their investigations, found to have tuberculosis were included in this study. The medical records of all patients were reviewed regarding their demographic, initial and final best corrected visual acuity, types of medications received by the patients, type of uveitis, and spectrum of uveitis complications. The obtained data was analyzed and compared with other studies. **Results:** 50 patients aged between 14 and 58 years (mean 35 ± 12 years) were included in the study. 62.0% of them were males. the most common method used for diagnosis of TB was QuantiFERON test. 70.0% of cases were bilateral and posterior uveitis was the most common pattern of uveitis (42.0%) encountered among the patients, 90.9% of the cases of anterior uveitis were granulomatous. The worst visual acuity was encountered among patients with posterior uveitis and the best visual acuity was found among patients with scleritis. **Conclusion:** tuberculous uveitis tends to occur in bilateral pattern. Due to the wide range of ocular tuberculosis manifestations, TB should be expected to be the etiology in any form of uveitis. However, higher index of suspicions should be considered in patients with posterior uveitis and granulomatous anterior uveitis

KEYWORDS: tuberculosis, uveitis, visual acuity.

INTRODUCTION

Tuberculosis has emerged as a significant contributor to uveitis, with prevalence rates varying across different geographic regions.^[1] Its diagnosis poses a challenge due to the lack of specific clinical features and the potential for overlap with other forms of uveitis. Diagnosis of tuberculosis-associated uveitis often relies on laboratory tests such as the QuantiFERON test and chest imaging, as obtaining ocular tissue for culture and isolation of TB bacilli is invasive and impractical.^[2, 3]

Tubercular uveitis can involve both extraocular structures like the lid, conjunctiva, cornea, and sclera, as well as intraocular components such as iritis, retinitis, vasculitis, and choroiditis.^[4] It may result from direct infection by tuberculosis bacilli or immunogenic reactions.^[5] Despite the effectiveness of national immune vaccination programs, the incidence of tuberculosis in Jordan has shown fluctuations over recent years.^[6] Despite the common occurrence of tuberculosis-associated uveitis in Jordan, its impact on vision is not yet studied.

Early detection of tubercular uveitis is vital to initiate timely treatment and prevent potential complications that could threaten vision.^[7] Management typically involves anti-TB therapy, along with corticosteroids and immunomodulatory agents, although the optimal duration and regimen are still subjecting of debate.^[8]

This study aims to provide a comprehensive review of the uveitis profile in patients with tuberculosis, focusing on epidemiological trends, clinical manifestations, diagnostic approaches, and management strategies.

RESULTS

50 patients aged between 14 and 58 years (mean 35 ± 12 years) were included in the study. 62.0% of them were males. the most common method used for diagnosis of TB was QuantiFERON test. Table 1 summarizes the different methods used for diagnosis of TB associated uveitis.

Table 1: Methods used for diagnosis of TB associated uveitis.

Method	Number of Patients	Percentages
QuantiFERON test	32	64%
PPD test	18	36%
High resolution chest CT scan	8	16%
Chest X-ray	4	8%
Anterior chamber fluid PCR	2	4%

Majority of cases were bilateral and posterior uveitis was the most common pattern of uveitis encountered among the patients, most of the cases of anterior uveitis were

granulomatous. The patterns of uveitis and BCVA are summarized in table 2.

Table 2: Patterns of TB associated uveitis and BCVA among the patients.

Patterns of uveitis	Number of patients	Percentages	Mean BCVA
Bilateral	35	70.0%	0.24
Posterior uveitis	21	42.0%	0.11
Anterior uveitis granulomatous	10	20.0%	0.33
Anterior uveitis non-granulomatous	1	2.0%)	0.52
Pan uveitis	15	30.0%	0.24
Intermediate uveitis	5	10.0%	0.26
Retinal vasculitis	2	4.0%	0.32
Scleritis (nodular)	1	2.0%	0.7

DISCUSSION

Tuberculosis stands out as a significant causative factor in uveitis. Maintaining a high level of suspicion and conducting thorough ocular examinations are crucial for promptly diagnosing and effectively managing tubercular uveitis, particularly in regions where tuberculosis is prevalent.

In our study, the QuantiFERON test emerged as the most frequently utilized diagnostic tool for tuberculosis, followed by the PPD test. This choice is significant due to the high specificity and sensitivity of the QuantiFERON test, which detects active tuberculosis or previous exposure to TB bacilli exclusively.

In contrast, the PPD test may yield false positive or negative results. However, the utility of high-resolution chest CT scans was limited, proving beneficial in only 16% of cases, where positive findings suggested active or past tuberculosis infection. The PCR test from the anterior chamber or vitreous, although potentially informative, was rarely employed due to its relatively invasive nature.

Unlike findings from other studies, a majority of cases in our study exhibited unilateral uveitis. This observation may be linked to the absence of pulmonary manifestations in most cases, hinting at an immune reaction rather than hematogenous spread of tuberculosis to the eye. Elangovan *et al.* also noted a high rate of unilateral cases accompanied by a high incidence of pulmonary TB.^[9]

Posterior uveitis emerged as the most prevalent presentation, a finding consistent with numerous other studies (4, 10). Instances of retinal vasculitis and scleritis

were infrequent among our patients. In cases of anterior uveitis, the majority exhibited a granulomatous pattern.

Regarding visual outcomes, patients with posterior uveitis and pan uveitis displayed the poorest visual acuity (0.11 and 0.24, respectively), while those with scleritis and non-granulomatous anterior uveitis demonstrated the most favorable outcomes (0.7 and 0.5, respectively).

CONCLUSION

Tuberculosis tends to occur in bilateral pattern. Due to the wide range of ocular tuberculosis manifestations, TB should be expected to be the etiology in any form of uveitis. However, higher index of suspicions should be considered in patients with posterior uveitis and granulomatous anterior uveitis.

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