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A study on management of anterior uveitis at a tertiary care hospital

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Abstract
A careful and detailed medical history is one of the keys to correct diagnosis in a patient with uveitis. It also provides information that may contribute to the choice of treatment indicated. The history-taking process should follow a structured approach and should include personal general information, chief complaint, past ocular and medical history, family history, review of systemic complaints and miscellaneous details on injury, surgery, migration and specific history on exposure to risk factors. A standard clinical proforma was filled in all cases, which included salient feature in history, visual acuity using Snellens visual acuity chart, clinical findings, laboratory investigations, and the final aetiology. All patients were examined under slit lamp.
Details on disease severity, laterality, chronicity, ocular signs and associated systemic conditions were noted. In the present study all the 50 patients (100%) were treated with topical steroids and cycloplegics-mydriatics. Periocular steroid was given in 9 patients (18%) of which one had bilateral chronic anterior uveitis and received injections to both the eyes. Systemic steroids were used in 18 patients (36%), which included 6 patients of phacolytic uveitis, 5 herpetic uveitis patients, 3 patients of TB, 2 idiopathic and one each in leprosy and psoriatic patient. 13 patients (26%) received antiglaucoma therapy.

Keywords: anterior uveitis, systemic steroids, mydriatics

Introduction
Uveitis can be defined as inflammation of uveal tract (iris, ciliary body and choroid). Although topographically apparently separate the iris, the ciliary body and the choroid are so closely related as to form a continuous whole [1].
The major purpose of classifying cases of uveitis is to provide information that can be used in developing a targeted differential diagnosis. Uveitis can be classified according to anatomic location, by cause, by the type of inflammation, by its manner of onset, by severity of inflammation, and by whether process is associated with a systemic disease. Each, one of these approaches has certain merits and conveys specific information on the disease process. Neither classification alone, however, presents a complete picture of underlying process. In an effort to bring some degree of uniformity to describing and classifying these diseases, the International Uveitis Study group (IUSG) has formulated a classification based on anatomic criteria and on criteria useful to describe evolution of the inflammatory disease. This classification is not only useful in aiding with the preparation of a differential diagnosis in clinical setting but also provides for a more standard international classification that will enable clinicians and investigators to discuss and compare their cases with greater uniformity [2, 3].
A careful and detailed medical history is one of the keys to correct diagnosis in a patient with uveitis. It also provides information that may contribute to the choice of treatment indicated. The history-taking process should follow a structured approach and should include personal general information, chief complaint, past ocular and medical history, family history, review of systemic complaints and miscellaneous details on injury, surgery, migration and specific history on exposure to risk factors. Particular attention should be devoted to the description and history of the chief complaint. The nature of the disease onset, severity, laterality, duration and course, the presence or absence of recurrent attacks, and the response to previous forms of treatment provide information that can be of diagnostic benefit and that may also have implications for future therapies and prognosis [4, 5].
In chronic anterior uveitis, however the eye may be white and symptoms minimal even in the presence of severe inflammation but visual haziness or blurring is much more conspicuous than it is in acute iridocyclitis.

The pain is usually periorbital but may also be referred along the trigeminal branches. It is an acute spasmodic ciliary neuralgia superimposed upon a dull ache, and is worse in the acute stages when the tissue is swollen and hyperaemic and the nerve endings are stimulated by a high concentration of toxic substances [6].
Redness is due to hyperemia and dilatation of the ciliary vasculature near the limbus [7].
Photophobia is commonly due to ciliary muscle spasm but anterior chamber cellular infiltration, corneal epithelial edema and pupillary muscle involvement and trigeminal irritation may also contribute.

Methodology

A standard clinical proforma was filled in all cases, which included salient feature in history, visual acuity using Snellens visual acuity chart, clinical findings, laboratory investigations, and the final aetiology. All patients were examined under slit lamp.
Details on disease severity, laterality, chronicity, ocular signs and associated systemic conditions were noted.
Presentation was considered as unilateral if active inflammation was present in only one eye and bilateral if both eyes presented with active inflammation.
Intraocular inflammation was assigned anterior uveitis based on International Uveitis Study Group Criteria.
The inflammation was defined as acute if symptoms were present for less than three months, chronic if symptoms were present for three months or more and recurrent if two or more episodes of inflammation separated by a disease free period.
Anterior uveitis was defined granulomatous if large keratic precipitates, nodules at pupillary margin (Koeppe nodules) or nodules on or within the anterior iris stroma (Busacca nodules) were present.
A short differential diagnosis was made in each case. Subsequently, a tailored laboratory investigation was carried out. Investigations included, total and differential counts, erythrocyte sedimentation rate, urine and stool examination, mantoux test. Serological tests for, syphilis, HIV, rheumatoid factor was done in all cases. Radiological investigations included x-ray of chest, lumbosacral and knee joints. Other special investigations were considered whenever necessary.
Consultation was done with other medical specialities, whenever needed.
Final aetiological diagnosis was made based on history, clinical features, laboratory investigations and systemic evaluation by other medical specialities.
The anterior uveitis was considered to have idiopathic aetiology when it was not associated with HLA-B27 haplotype and neither with defined clinical syndromes nor with definitive aetiology.
All patients were treated medically with topical steroids (prednisolone acetate 1%) and topical cycloplegic mydriatics (atropine or homatropine). Steroids frequency was titrated according to severity of uveitis.
Appropriate treatment was given whenever etiology was known.
Systemic antimicrobials were administered when infectious agent was found to be the cause.
Systemic steroids were used when inflammation was severe, not responding to treatment and patients with macular oedema.
Patients with lens induced inflammation where treated surgically. In patients with uveitis associated with visually significant cataract, cataract surgery was done 3 months after active inflammation had subsided. These patients were given with high doses of topical and systemic steroids 1 week prior to surgery and then gradually tapered.
Cases of anterior uveitis with secondary glaucoma were treated with T. Acetazolamide 250mg BD/TID and/or Timolol 0.5% eye/drops BD along with topical steroids.

Results

Table 1: Treatment

Type of treatment given	Number of cases	Percentage
Topical steroids and cycloplegics-mydriatics	50	100
Periocular steroids	9	18
Systemic steroids	18	36
Anti-glaucoma	13	26
Anti-tubercular	3	6
Anti-viral	5	10
Anti-leprosy	1	2
Antibiotics	13	26
Cataract surgery	7	14

In the present study all the 50 patients (100%) were treated with topical steroids and cycloplegics-mydriatics. Periocular steroid was given in 9 patients (18%) of which one had bilateral chronic anterior uveitis and received injections to both the eyes. Systemic steroids were used in 18 patients (36%), which included 6 patients of phacolytic uveitis, 5 herpetic uveitis patients, 3 patients of TB, 2 idiopathic and one each in leprosy and psoriatic patient. 13 patients (26%) received antiglaucoma therapy. 3 patients (6%) received antiTB drugs, antivirals were considered in 5 cases (10%) and all of them had herpetic anterior uveitis. One patient who had already been started on antileprosy therapy was continued. Systemic antibiotics were given in 13 patients (26%) (7 underwent cataract extraction, 4 chronic idiopathic cases, one each in inflammatory bowel disease and septic arthritis).

Table 2: Visual Acuity after Treatment

Visual acuity	After treatment	
	No. of eyes	Percentage
PL + PR +	-	-
< 6/60	-	-
6/60	1	1.82
6/36	3	5.45
6/24	2	3.64
6/18	4	7.27
6/12	6	10.91
6/9	14	25.46
6/6	25	45.45

The above table shows the visual acuity observed in 55 eyes before and after treatment. Before treatment 4 eyes had visual acuity PL+PR+(7.27%), 6 eyes had less than 6/60(10.91%), 9 eyes 6/60(16.36%), 5 eyes 6/36(9.09%), 6 eyes 6/24(10.91%), 7 eyes 6/18(12.73%), 11 eyes 6/12(20%), 6 eyes 6/9(10.91%) and 1 eye 6/6(1.82%). Following treatment 70.91% of patients regained visual acuity of 6/9 or better. In a few patients visual acuity improved only marginally because of associated complications, such as complicated cataract and secondary glaucoma commonly seen in chronic and recurrent cases.

Discussion

Visual acuity was 6/12 or worse in majority (87.3%) of eyes at presentation. Following treatment most eyes regained visual acuity of 6/9 or better (70.91%). In few eyes with complicated cataract or macular edema, visual acuity improved only marginally.

No complications were seen in 37 eyes (67.27%). Complications were commonly noted in chronic and recurrent cases. Most common complication observed was persistent posterior synechiae in 13 eyes (23.64%), cataract in 8 eyes (14.54%). Secondary glaucoma was seen in 7 eyes (12.73%), which included 2 herpetic eyes, both the eyes in a psoriatic patient, two idiopathic and one eye in TB anterior uveitis. Iris atrophy was seen in 3 eyes (5.45%), two of them in a leprosy patient and the third was in a herpetic patient and macular edema was seen in 1 eye (1.82%).

A short differential diagnosis was made in each case after complete ocular and systemic examination with tailored approach to the laboratory investigations.

All patients were treated medically by topical steroids and cycloplegics-mydriatics. Treatment with antibiotics, antitubercular drugs, antileprosy and antiviral drugs were considered in appropriate cases. Periocular and systemic steroids were used in cases with severe inflammation which was not controlled by topical steroids. A case of visually significant complicated cataract underwent synechiaeotomy and extracapsular cataract extraction with posterior chamber intraocular lens implantation. Cataract extraction with posterior chamber intraocular lens implantation was done in all cases of phacolytic anterior uveitis. In all cases surgery was done under the cover of systemic steroids [7, 8].

Conclusion

- Majority of anterior uveitis patients respond to medical line of treatment.
- Early diagnosis and treatment of patients results in good visual prognosis and is the key in management of anterior uveitis.

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