ORIGINAL ARTICLE

TRACHOMA THERAPY: AN ALTERNATIVE REGIMEN

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ABSTRACT

Background: Trachoma is caused by a bacterium Chlamydia trachomatis. The objective of this study was to evaluate the effectiveness of an alternative regimen of oral azithromycin for the treatment of active trachoma against WHO recommended regimen.

Material & Methods: This cross-sectional study was conducted at Khano Eye Hospital, Lakki Marwat, Khyber Pakhtunkhwa, from January 2008 to December 2008. Sixty patients with active trachoma were included. Those with advanced trachomatous complications like trichiasis and corneal opacity were excluded. Patients were randomly assigned to two groups of 30. Group A received oral azithromycin one gram stat, while Group B was given oral azithromycin 500 mg daily for 3 days. Success of regimen was defined as disappearance of discharge and improvement of "off & on" defective vision at 2 weeks. Descriptive and inferential statistics were applied. $P<0.05$ was taken as statistically significant.

Results: Out of 60 patients, 20(33.3%) were males and 40(66.6%) females. Mean age of the patients was 26.3+5.5 (12-45) years. Fifty (83.3%) patients were living in rural areas and 10(16.7%) in urban areas. Predominant symptoms were sticky eyes in the morning in 18(30%) patients and defective vision "off & on" in 36(60%) patients. Twenty-eight (96.7%) patients showed improvement in symptoms in the form of disappearance of discharge and visual improvement in group-A as compared to 29(98.6%) in group-B. The difference was not statistically significant ($p>0.05$).

Conclusion: Oral azithromycin 500 mg daily for three days may be used safely and effectively for the treatment of active trachoma.

KEY WORDS: Trachoma; Trachoma therapy; Azithromycin.

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INTRODUCTION

Trachoma is one of the earliest recorded eye afflictions, having been recorded in Egypt as early as 15 BC. Its presence was also reported in ancient China and Mesopotamia.[1] Trachoma is caused by a bacterium; Chlamydia trachomatis and is spread by direct contact with eye, nose and throat secretions from infected individuals or contacts through fomites. Untreated, repeated trachoma infections result in entropion leading to permanent blindness. Children are most susceptible to infection, but the blinding effects are often not felt until adulthood. Blinding endemic trachoma occurs in areas with poor personal and family hygiene. Many factors are indirectly linked to the presence of trachoma including lack of water, absence of latrines or toilets, poverty, flies, close proximity to cattle, overcrowding and so forth.[2]

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The bacteria have an incubation period of 5 to 12 days, after which the infected individual experiences symptoms of conjunctivitis. Blinding endemic trachoma results from multiple episodes of re-infection that maintains the intense inflammation of conjunctiva. Without re-infection, the inflammation will gradually subside. The conjunctival inflammation is called "active trachoma" and usually is seen in children, especially preschool children. It is characterized by white lumps in the undersurface of the upper eye lid (conjunctival follicles or lymphoid germinal centers) and by non-specific inflammation and thickening often associated with papillae. Follicles may also appear at the limbus. Active trachoma will often be irritating and have a watery discharge. Bacterial secondary infection may occur and cause a purulent discharge. The later structural changes of trachoma are referred to as "cicatricial trachoma". These include scarring of the tarsal conjunctiva that leads to distortion of the eyelid and trichiasis leading to corneal opacification and blindness. In addition, blood vessels and scar tissue may invade the up-

per cornea (pannus). Resolved limbal follicles may leave small gaps in pannus (Herbet's pits). Further symptoms include: eye discharge, swollen eyelids, preauricular lymphadenopathy, ear nose and throat complications.

According to a recent estimate, some 84 million people have active trachoma in 55 countries in which the disease is endemic and 7.6 million people have trachomatous trichiasis.[3] The WHO advocates the implementation of SAFE strategy, an integrated intervention with four facets; surgery, antibiotics, facial cleanliness and environmental improvement. Surgery is indicated for advanced trichiasis. Antibiotics are used to eliminate the chlamydial infection, to reduce transmission of disease and to avert progression of disease to the blinding stage. Facial cleanliness is important to reduce transmission of disease especially among children. Environmental improvement involves interventions to reduce the population of eye-seeking flies, reduce extreme crowding and access to clean water.[3]

WHO recommends azithromycin (one gm stat or 20 mg/kg as single oral dose) or topical tetracycline (one percent eye ointment twice a day for six weeks).[4] Azithromycin is preferred because it is used as a single oral dose. It can be used in children from the age of six months and in pregnancy.[5] An alternative regimen is also used by some of the practitioners that consists of oral azithromycin 500 mg daily for 3 days. This regimen apparently looks convenient for the patients because they do not have to take a bigger dose at one time. Moreover, most commercially available oral azithromycin is in the form of a pack of 6 tablets/ capsules of 250mg, so the patient takes a full pack conveniently.

The objective of this study was to evaluate the effectiveness of an alternative regimen of oral azithromycin for the treatment of active trachoma.

MATERIAL AND METHODS

This cross-cross sectional study was conducted at Khano Eye Hospital, Lakki Marwat, Khyber Pakhtunkhwa, from January 2008 to December 2008. A total of 60 patients diagnosed to be having active trachoma were included in our study. Patients with advanced trachomatous complications like trichiasis and corneal opacity were excluded from the study. Slit-lamp examination was performed to confirm the clinical diagnosis. Patients were randomly assigned to two groups; A & B, each consisting of 30 patients. Regimen A was the same as is recommended by the WHO i.e. oral azithromycin one gram stat, while the alternative regimen B, which is used by some of the practitioners, consisted of oral azithromycin 500 mg daily for 3 days. The success of a regimen was defined as disappearance of discharge and improvement of "off & on" defective vision at 2 weeks follow up visit. Topical tetracycline ointment was prescribed twice daily afterwards to all the patients to prevent recurrence. Demographic variables were gender, age in years, occupation and residence. Predominant symptoms and Improvement in symptoms were the research variables. Descriptive and inferential statistics were applied. $P<0.05$ was taken as statistically significant.

RESULTS

Out of 60 patients included in our study 20 (33.3%) were male and 40 (66.6%) were female. Mean age of the patients was 26.3+5.5 years with a range of 12-45years. Regarding residence, 50 (83.3%) patients were living in rural areas and 10 (16.7%) in urban areas. Table 1 shows the distribution of patients by occupations.

Predominant symptoms in most of the patients were discharge, especially sticky eyes in the morning, in 18 (30%) patients and defective vision "off & on" in 36 (60%) patients. Rest of the patients presented with symptoms like pain, itching and swollen lids etc. Table 3 shows distribution of patients by symptoms. Table 2 presents the distribution of patients by predominant symptoms of trachoma.

Twenty-eight (96.7%) patients showed improvement in symptoms in the form of disappearance of discharge and visual improvement in group-A as compared to 29 (98.6%) in group-B. The difference was not statistically significant ($p>0.05$). Two (3.3%) patients in group-A and one (1.6%) in group-B were still complaining of discharge in the morning. These patients were prescribed another dose of azithromycin plus topical tetracycline ointment twice daily along with a mucolytic agent (acetyl-cystine) eye drops. They were also improved on next follow up

Table 1: Occupation of patients suffering from trachoma (n=60).

Occupation	Frequency	Percent
Farmer	8	13.3
House-wife	18	30.0
Jobless	8	13.3
Female *Madrassah students*	20	33.3
School student	6	10.0

Table 2: Predominant symptoms of patients suffering from trachoma (n=60).

Predominant symptoms	Frequency	Percent
Discharge in morning	18	30
Defective vision "off & on"	36	60
Other symptoms	6	10

visit. Table 3 presents distribution of patients by improvement of symptoms.

Table 3: Improvement in symptoms of patients suffering from trachoma (n=60).

Group	Frequency	Percent
A	28	96.7
B	29	98.6

DISCUSSION

In our study females were predominantly affected, which is similar to the findings of other national and international studies.[6,7] The reason for this may be that, in our setup females are in close contact with the children and active trachoma is mainly a disease of preschool children.

Another interesting finding in our study was that young adults were the most common cases presenting to us (Age=26.3+5.5 years) which is in contrast to the finding of other community-based studies.[8] The reason may be that in case of preschool children discharge from the nose or sticky eyes in the morning are not given importance and are considered insignificant especially in the rural setup. This shows lack of health education especially in females of rural communities who are the primary care-takers of their children. It is only when the recurrent disease bothers the young adults, it is taken as disease and then the patients present to the physicians.[6]

Most of the patients were from the rural areas and the reason is apparent because the risk factors (flies, cattle, lack of toilets & water) are more abundant in these areas.[9,10] An important finding is that a significant number of young female patients were students of female "Madrassahs". Again overcrowding, sharing of towels and beds may be a cause for recurrent infections in these setups.

Most common presenting complaint in our patients was defective vision "off & on" (60%) followed by discharge (30%). Again it shows the lack of health education in families of our patients where discharge in the eyes on getting up in the morning is usually taken as normal especially in young children.[9,11] One should be careful because a significant number of patients may present with other symptoms like watering, itching and pain etc leading to misdiagnosis of the disease. Moreover associated papillae on upper tarsal conjunctiva may lead to misdiagnosis of allergic conjunctivitis. In fact it was noted during the study that many patients were using topical steroids which actually aggravated the disease. The symptoms were of chronic in nature with duration of at least >6 weeks. Initially there was discharge only in the morning but with the passage of time it increased and started coming in front of the cornea, so causing defective vision "off & on" and brought the patient to the physician.

Although this regimen is not exactly mentioned in literature but its use looks rational keeping in mind its duration of action and indications in other diseases.[12]

CONCLUSION

Oral azithromycin 500 mg daily for three days may be used safely and effectively for the treatment of active trachoma, keeping in mind the convenience of the patients.

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