

Demographic Study of Trachoma Patients and Their Response to Azithromycin

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Purpose: To study demographics of trachoma patients and their response to azithromycin.

Material and Methods: This was observation and clinical assessment study done for one year from June 2006 – June 2007. The study was carried out, in an out patient eye clinic at District Bannu on eye patients, on random basis. The strategy investigated was the use of single dose azithromycin treatment for those who were found to be having clinically active trachoma, as well as all members of their household. All patients were followed for three months and followup was done at one week, one month and three months.

Results: 5000 patients were examined randomly during the year 2006-07 for various ocular ophthalmic problems, out of which 120 (2.4%) cases were having signs of acute trachoma. Among these patients, 108 (90%) were female and 12 (10%) were male. With single dose treatment of azithromycin 96 (80%) patients completed their three months follow-up 103 (85.83%) completed one month follow-up and 117 (97.50%) completed 1st week follow-up. Compliance of the patients was 100%. Only two patients got recurrence after 2nd follow-up.

Conclusion: There is a very high frequency of trachoma patients in district Bannu and the main victims of the disease were women folk of the community. It is concluded that a single dose of azithromycin is very effective for the treatment of trachoma.

Trachoma is the second leading cause of blindness worldwide¹. According to the World Health Organization, currently 84 million people, mostly children, have active disease, and another 7.6 million people have trichiasis – a stage of trachoma in which the upper eyelid turns inward and one or more eyelashes rub against the eyeball². An estimated 10% of the world's population lives in endemic areas and is at risk of developing trachoma. Global loss of productivity related to impaired vision and blindness from trachoma is thought to be as high as \$US 5.3 billion annually³. More than 55 countries have been identified as endemic for trachoma, most of them in Africa and Asia⁴. Transmission occurs from eye to eye via hands, clothing and other fomites. Flies have been identified as a major vector for the spread of infection.

Recent molecular epidemiological research from the Northern Territory showed different Chlamydia trachomatis strains in coastal compared with inland communities, indicating that trachoma transmission may occur more within communities or within groups of neighboring communities rather than between far-flung, distant communities⁶.

World Health Organization guidance for antibiotic treatment of trachoma currently includes a 6 week course of tetracycline ointment twice daily or single dose of Azithromycin, on the other hand, has been shown to be effective against C. trachomatis with one dose administered orally⁷. Azithromycin is in the azalide class of antibiotics. It has unique pharmacokinetic properties that make it ideal for treating trachoma; good oral bioavailability and distribution to

tissues, sustained high tissue levels with low protein binding, and high intracellular concentration is important in treating *Chlamydia trachomatis* with azithromycin⁸.

World Health Organization recommends the "SAFE" strategy for the management of trachoma: Surgery for Trichiasis, Antibiotics for active disease, facial hygiene, Environmental improvement to reduce the transmission of the disease⁹⁻¹¹.

MATERIAL AND METHODS

This study was based on clinical observations and examination of eye patients of either sex in an out patient clinic.

The total duration of the study was from June 2006 to May 2007. Cases selected randomly on the basis of inclusion criteria (age between one year to 60 years, acute cases without complication of trachoma) and exclusion criteria (age below one year and above 60 years, those allergic to macrolides, chronic trachoma with complications and pregnant women). These patients were divided into two groups in group-A were children one to 15 years and in group B were adults 16 to 60 years.

Diagnosis of trachoma made clinically with typical symptoms and signs. After confirmed clinical diagnosis of the trachoma condition in the patients, all the patients were put on the following recommended treatment protocol:

1. Topical application of oxytetracyclin ointment Q.I.D
2. Azithromycin, 20mg/kg body weight in children and 1 gm. stat dose in adults

All the patients were followed up for three months at one week, one month and three months. In this study no data on surgical indication, intervention, complication and success is included.

RESULTS

5000 patients were examined randomly for various ocular/ ophthalmic problems, out of which 120(2.4%) cases were having typical signs of trachoma. In group-I, 36 (30%) were children and in group-II, 84 (70%) were adults. Out of 120 cases 96 (80%) patients completed their three months follow-up, 103 (85.83%) completed one month follow-up and 117 (97.50%) completed 1st week follow-up. Compliance of the patients was 100%. Only 2 (1.66%) patients got recurrence after 2nd follow-up.

Out of 120 patients 108 (90%) were female and 78% were house wives, 18% were students of Islamic madrassa and 4% were below school going age. 12 (10%) were male (98%) of them were from Islamic madrassa and (2%) were house man. (98%) of these patients were low socioeconomic condition and only (2%) have a satisfactory socioeconomic condition.

DISCUSSION

Trachoma is a common infectious disease of eyes caused by an obligate intracellular organism, *Chlamydia trachomatis*, which causes blindness throughout the world, by irreversible corneal destruction. This diseases is totally eradicated from the developed counties, and now trachoma was largely forgotten as a public health issue until recently, when a new antibiotic donation program, coupled with renewed focus by the World Health Organization (WHO), rekindled interest in eradicating blinding trachoma by the year 2020. Trachoma continues to be hyper endemic in many of the poorest and most remote areas of Africa, Asia Australia and Middle East¹².

The pathogenesis of trachomatis microorganism causes mild to severe bulbar conjunctival congestion with inflammation and in most complicated cases the inverted eye lid made the eyes susceptible for entropion. During this study conducted majority of the patients were female in both age groups.

Many different antibiotics have been suggested and trialed for use against active trachoma¹³. Single dose oral Azithromycin was a more effective treatment for active trachoma than tetracycline ointment as applied by care givers¹⁴. According to world Health Organization (WHO) guidelines, all members of a community should receive mass antibiotic treatment when prevalence of active trachoma is greater than 10 percent among one to nine year old children¹⁵. In areas where prevalence is greater than 50 percent, mass antibiotic distribution may be viable tool for elimination of trachoma. This is illustrated in a study of three Ethiopian Villages including 710 patients who received mass oral Azithromycin distribution area 30 months period, the mean prevalence declined from 43 to < 1 percent¹⁶⁻¹⁷. A randomized trial of 1452 patients in Ethiopia showed that single dose Azithromycin reduced postoperative Trichiasis recurrence rates by one third compared with topical tetracycline (7 versus 10 percent)¹⁹. The benefit of perioperative azithromycin may be more significant

in severe trichiasis eyelashes touching the cornea or more than five lashes touching the globe^{20,21}.

Trichiasis and entropion are more common in women than men, possibly because of recurrent infection with *C. trachomatis* resulting from close contact with children. When the eye lid, specially the upper one, was averted many follicles with congestion were present²². In our study most of the patients of trachoma were young females and professionally most of them were house wives and of low socioeconomic condition. Women are at increased risk of active infection because of their care taking activities with young children. If compliance is inadequate with topical preparations, women may form a significant source of re-infection of the community.

Administration of the drug and monitoring of compliance was considerably easier with azithromycin, compared to tetracycline topical ointment. The results of these studies have clearly identified that azithromycin offers an important new weapon in antibiotic intervention for trachoma control. Azithromycin has not been approved for use in pregnant women by the Food and Drug Administration in the United States.

Face washing helps to interrupt the transmission of trachoma, since ocular and nasal secretions are potential sources of infection with *C. Trachomatis*, improved facial cleanliness could reduce transmission to others, as well as reducing auto-reinfection. It is difficult to measure facial cleanliness accurately, many cross-sectional surveys have shown that children with clean faces are less likely to have trachoma, and are less likely to have severe trachoma²³.

CONCLUSIONS

It has been concluded that trachoma is a disease of poverty overcrowding and lack of cleanliness and the best treatment is single oral dose azithromycin and tetracycline ointment, improving water supply, latrine provision and fly control. Good facial hygiene aims to reduce transmission, the risk of autoinfection in a community, and the risk of attracting flies.

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