

## PREVALENCE OF TRACHOMA IN THAR DESERT AREA OF SINDH

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### ABSTRACT

**OBJECTIVE:** To determine the prevalence of trachoma in a given population.

**DESIGN:** A cross – sectional study.

**SETTING:** Department of Ophthalmology, Civil Hospital, Mirpurkhas - Sindh from January to December 2001.

**METHOD:** A total of four thousand (4000) patients of different age groups undergone a clinical examination of anterior eye during study period. Those with the clinical findings of trachoma underwent further detailed examination including visual acuity, tonometry and dilated ophthalmoscopy. The diagnosis of different stages of trachoma was confirmed clinically using simplified trachoma grading system of World Health Organization.

**RESULTS:** Out of 4000 patients, 515 (12.87%) were found having clinical findings of trachoma. Among these, 215 (41.74%) were male and 300 (58.25%) female patients. The prevalence of active trachoma was higher in female children.

**CONCLUSION:** Trachoma has become endemic in the increasing poor population of District Tharparkar. The disease is increasing due to deficient water supply, poor sanitation and unhygienic living standards of the people of area.

**KEY WORDS:** Trachoma. Blindness. Prevalence. Pakistan.

### INTRODUCTION

Trachoma is a communicable disease. It is a type of kerato-conjunctivitis that runs a chronic course and is the second leading cause of blindness in world<sup>1,2</sup>. The causative agent *chlamydia trachomatis* is spread by direct contact, dirt and flies. The ocular involvement in trachoma ranges from conjunctival follicles to trichiasis, corneal scarring, complete corneal opacity and blindness<sup>3,4</sup>. This infection is transmitted from eye to eye by hands, clothing and other fomites. Flies are the major vector for the spread of infection<sup>5</sup>. More than fifty-five countries have been identified as endemic for trachoma, most of them in Africa and Asia<sup>6</sup>. Trachoma frequently occurs in adult women<sup>7</sup>. Based on the clinical evidence of disease, World Health Organization (WHO) has introduced a simplified grading system for the assessment of trachoma<sup>8,9</sup>. It includes normal tarsal conjunctiva (N), trachomatous follicle (TF), trachomatous intense inflammation (TI), trachomatous scarring (TS), trachomatous trichiasis (TT) and corneal opacity (CO). Regarding the prevalence of trachoma in different districts of Pakistan, detailed work has not yet been

conducted. However, in some generally collected data within few districts, active trachoma has been found most common presentation (2.4%) followed by trichiasis (1.6%)<sup>10</sup>. Among afghan refugees in Northern Pakistan, active trachoma (TF and TI) has been found in 3.7% of children under 10 years of age. However, the overall prevalence of active trachoma has been reported as 2.6%<sup>11</sup>.

This study was designed to see the prevalence of trachoma in Thar desert area of Sindh.

### PATIENTS AND METHODS

This cross-sectional study was carried out from January to December 2001. Local patients and those coming from different towns and villages of district Tharparkar were examined. The team of doctors consisted of two ophthalmologists, each accompanied by one senior medical officer already working at eye department of Civil Hospital, Mirpurkhas - Sindh and the other paramedical staff. All patients undergone a routine examination of anterior eye with binocular ophthalmic loupe (2.5 X) and hand held light source. The patients having clinical findings of trachoma

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undergone further detailed examination i.e. visual acuity, tonometry, dilated ophthalmoscopy. The diagnosis of trachoma was confirmed on clinical assessment. Due to paucity of histopathological facilities at Mirpurkhas and its surroundings, the patients were diagnosed using simplified grading system of trachoma adopted by WHO. A total of four thousand (4000) patients were examined during study period.

**RESULTS**

Out of four thousand patients examined, 515 patients had clinical findings of trachoma. Children under the age of 12 years showed high prevalence of active disease with majority in females (**Table I**). **Table II** shows the prevalence in adult age group. In this group also, the female patients had the increased prevalence than male patients. Active trachoma (TF, TI) was present in 180 (34.95%) male and 246 (47.76%) female patients. The frequency of active trachoma was higher in children and young adults. However, the total number of patients with trichiasis and corneal opacities was critically lower (**Table II**). Trachoma in general and active trachoma in particular was found more prevalent in females as compared to male patients. Overall, the prevalence of trachoma in 4000 patients during study period was found as 12.87% (515 patients). Its prevalence in males was 41.74% (215 patients) and in females, it was 58.25% (300 patients). Findings based on clinical diagnosis of patients according to WHO grading system are presented in **Table III**.

**TABLE I:  
PREVALENCE OF TRACHOMA IN CHILDREN  
(n= 515)**

Age (years)	Sex	Number of Patients	Prevalence
1 – 4	M*	20	03.88%
5 – 8	M	55	10.67%
9 – 12	M	40	07.76%

\*M = Male \*\*F = Female

**TABLE II:  
DISTRIBUTION OF TRACHOMA IN  
ADULT PATIENTS**

Age (years)	Sex	Number of Patients	Prevalence
13 – 16	M	18 26	03.49% 05.04%
17 – 20	M	13 20	02.52% 03.88%
21 – 24	M	12 17	02.33% 03.30%
25 – 28	M	12 18	02.33% 03.49%
29 – 32	M	10 15	01.94% 02.91%
33 – 36	M	8 12	01.55% 02.33%
37 – 40	M	8 11	01.55% 02.13%
41 – 44	M	7 11	01.35% 02.13%
45 – 48	M	6 10	01.16% 01.94%
49 – 52	M	4 6	00.77% 01.16%
53 – 56	M	2 4	00.38% 00.77%

**TABLE III:  
CLINICAL DIAGNOSIS OF PATIENTS ACCORDING  
TO WHO GRADING SYSTEM**

**DISCUSSION**

WHO Grade	Sex	Number of Patients	Prevalence
TF, TI	M	180	34.95%
TS	M	15	02.91%
TT	M	35	06.79%
CO	M	06	01.16%

Trachoma is a disease of poor communities living in developing countries and accounts for 15% of blindness worldwide. In this way, about 6 million people suffer from blindness due to trachoma<sup>12</sup>. According to WHO, currently, 84 million people mostly children have active disease and another 7.6 million people suffer from trichiasis, the stage of trachoma in which upper eye lid turns inwards and eye lashes rub against the eye ball<sup>12</sup>. In this study also, the prevalence of active trachoma was higher than the stage of complications i.e. trachoma T (trichiasis). An estimated 10% of world's population lives in endemic areas and is more prone to develop trachoma<sup>13</sup>. This study was also designed in the population of Tharparkar desert area of Sindh which is most endemic area to trachoma. More than 90% of blindness from trachoma is found in developing countries and vast majority of problem is seen in rural areas of these countries like Tharparkar<sup>14</sup>. District Tharparkar is one of the remote areas of Sindh province where basic needs of life and water supply are quite scarce. In this study, females were found suffering more than the male individuals from trachoma. Possible reasons for it may be that in Tharparkar area, people are living in a very unhygienic atmosphere and women also have more contact with their children as compared to males. Over crowding, lack of water supply and amount of water used for washing purposes are the major sources for trachoma infection<sup>15</sup>. In trachoma, blindness results from corneal opacification related to the degree of trichiasis<sup>16</sup> and in this study, 16 patients developed corneal opacities due to trichiasis. In quite a good number of studies performed elsewhere, it has been shown that the prevalence of trachoma decreases in those areas where people are trained to acquire the habit of proper face and hands washing<sup>17-19</sup> and eliminating trachoma as a blinding disease should be the goal of community ophthalmologists through increasing the awareness of population by means of continued and related health education. The concerned health staff of community ophthalmology centers should also be trained properly to diagnose the disease and ensure provision of timely treatment. This is an unusual study regarding the prevalence of trachoma in District Tharparkar of Sindh province. This provides vital epidemiological data regarding higher prevalence of trachoma in this area as compared to local and

international literature. This data can be highly beneficial for designing measures to control and eradicate the trachoma in Tharparkar.

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