ORIGINAL RESEARCH PAPER
Volume-9 | Issue-2 | February-2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

SOCIO-DEMOGRAPHY STUDY OF NON HEALING CORNEAL ULCER IN ADMITTED PATIENTS AT TERTIARY EYE CARE CENTRE- PT.J.N.M.MEDICAL COLLEGE DR.B.R.A.M.RAIPUR (C.G)

Ophthalmology

Dr. Santosh Ekka Assistant professor, Department of Ophthalmology, GMC Ambikapur C.G.

Dr. Abha Ekka* Assistant professor, Department of Community Medicine, GMC Ambikapur & ambust building near carmel school gate, ring road, Namnakala, Ambikapur C.G. *Corresponding Author

ABSTRACT

Background: Corneal diseases are one of the major causes of monocular blindness in the world after cataract. The predisposing factors for supportive corneal ulcer are ocular factors, traumatic agent and systemic diseases.
Objective: To determine the socio-demography of non healing corneal ulcer.
Methods: Study was Descriptive, Cross sectional, Observational study undertaken with 80 subjects during August 2015 to November 2016 in the Department of Ophthalmology, Dr. B.R.A.M. Hospital, Pt. J.N.M. Medical College Raipur, C.G.
Result: Maximum prevalence shows by age group of 41 – 50 year was 28.75%, belonging to lower socioeconomic status 72.5%, those were house wives 43.7% & population of rural residence 88.75%.
Conclusions: Outdoor occupation was more sufferer as they were more chances to get injury.

KEYWORDS

Corneal ulcer, non healing corneal ulcer, socio-demography.

INTRODUCTION :-

Eyes helps the human body to do its tasks with coordination. Eyes are the windows of the soul. Without it, a man won't be able to see the beauty of this wonderful world. Without eyes, the five basic senses would not be complete.[1]The cornea is the outer and most powerful refracting surface of the optical system of the eye. The normal healthy cornea is avascular and devoid of lymphatic channels. Being the most anterior part of the eyeball, the cornea is exposed to atmosphere and hence prone to get infected easily & cause corneal ulcer[2].Corneal ulcer is a sight threatening disorder & second leading cause of monocular blindness in developing countries presenting in all age groups and either sex worldwide.[3] It may resolve without any squeals, progress to perforation and its resultant consequences, or leave behind an opacity which if central may lead to loss of vision. Thus corneal ulcer may be defined as discontinuation in normal epithelial surface of cornea associated with necrosis and oedema & it is called **non healing corneal ulcer** if the ulcer progresses despite the specific treatment for the cause, non specific supportive therapy, physical & general measure for 7 to 10 days.[4] It is estimated that ocular trauma & corneal ulceration result in 1.5 to 2 million new cases of corneal blindness annually.[5] The predisposing factors for supportive corneal ulcer are ocular factors, traumatic agents (Paddy/ paddy stalk, Jute plant, Other vegetative matter, dirt/sand/mud/stone chip, insects, cows tail, fingernail) and systemic diseases[6].

The various risk factors for corneal ulcers and its mode of presentations are rife in literature but they vary from region to region as it depends on the culture, socioeconomic status, occupation, habits, etc, of a particular place/region. In Chhattisgarh 76.76% population belong to rural area, around 80% employment dependent on agricultural with literacy 72.3%.[7] Thus the present work will be undertaken to find out socio-demographic profile of **Non Healing Corneal Ulcer patients**

MATERIAL & METHODS :

study centre :The present study undertaken in the Department of Ophthalmology, Dr. B.R.A.M. Hospital, Pt. J.N.M. Medical College Raipur,C.G.

Study Design: Descriptive, Cross sectional, Observational study.

Study Period: Survey conducted between August 2014 to July 2015.

Sample Size : All cases fulfilling the criteria, enrolled & admitted in department of Ophthalmology (n= 80).

Inclusion criteria: All suspected cases with non healing corneal ulcer (ulcer progresses despite the specific treatment general measure for 7 to10 days).[4]

Exclusion criteria: 1. Those corneal ulcer patient not received treatment prior to admission but healed on treatment within 7 days.2. Corneal ulcer with ocular tumor (primary & secondary ocular tumour)

Sampling method: Purposive sampling

Study Tool : Predesigned, Pretested semi structured proforma.

Study Technique: by History taking, Clinical examination, Investigation, Observation

Ethical Consideration: Informed/verbal consent prior to Clinical examination from patient.

RESULT :

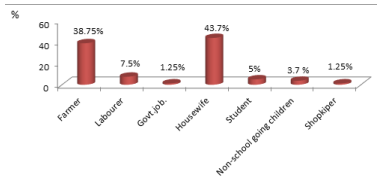
There were 80 cases of non-healing corneal ulcer admitted during our study period. Maximum number of non healing corneal ulcers occurred in 41 to 50 years of age (28.75%).The minimum were in >70 years (2.5%) followed by 5% in age group of up to 10 years..Non healing corneal ulcer was equal in both male (50%) and female (50%), ratio of 1:1. In males corneal ulcer were observed to more commonly (18.75%) in the 41 to 50 years of age group. But in Female maximum (15%) were seen in the 51 to 60 years of age groups. While in male least 1.25% were <10 years of age group and in female 0% in >70 years of age.

Table No.1 Age and sex wise distribution of non healing corneal patient (n=80)

Age Group in year	Male	%	Female	%	Total	%
<10 year	1	1.25	3	3.75	4	5
11 – 20 year	3	3.75	2	2.5	5	6.2
21 – 30 year	2	2.5	6	7.5	8	10
31 – 40 year	4	5	6	7.5	10	12.5
41 – 50 year	15	18.75	8	10	23	28.75
51 -60 year	7	8.75	10	15	17	21.25
61 – 70 year	6	7.5	5	6.25	11	13.75
>70 year	2	2.5	0	0	2	2.5
Total	40	50	40	50	80	100

In this study the maximum (43.7%) of non-healing corneal ulcer was in housewives followed by farmers 38.75%.While minimum (1.25%) were govt. service and shopkeeper.

Fig no.1 Distribution of cases according to occupation (n=80)



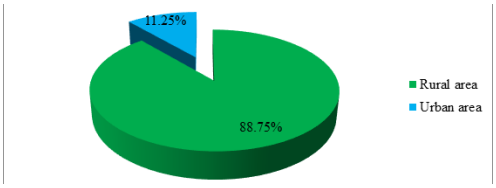
Present study shows non healing corneal ulcer highest in lower class group (72.5%), followed by middle income group (23.75 %).

Table no.2 Distribution of patients according to socioeconomic status (n=80)

Socioeconomic Status	Number of cases	%
Lower class	58	72.5
Middle class	19	23.75
Upper class	3	3.75
Total	80	100

This study shows that non healing corneal ulcer patients were more commonly from rural area (88.75%) in comparison to urban area (11.25%).

Fig 2. Distribution of patients according to residence (n=80)



DISCUSSION-

Age of non healing corneal ulcer of the patient varied from 20 days to 75 years. Maximum number of non healing corneal ulcer 51.25% were between the ages 21 to 50 years. Second finding of our study was that the minimum were in >70 years (2.5%) followed by 5% in age group of up to 10 years. Similar finding was found in **Khare P** et al shows that 234 cases during their study period. 53.9% patients were in between 26 to 45 years of age, only 4.16% patient were pediatrics age group <15 years.[8], **Shashi Gandhi** et al shows that maximum 36% were between 40 to 60 years of age group.[9] **Rajpal Singh Punia** study found that the diseases was more common in the age group of 41-60 years .[10] Similar finding was found in **Laspina** et al, it was found that the greatest frequency was in the age group of 30 -59 years.[11]**Sharmeen Ahmed** study shows that 71.43% were between the ages 21 to 50 years.[12]**Keshav BR** et al shows that 12.76% were <30 years of age,22.87% were 30-60 years of age,64.36% were > 60 years of age.[13]All above studies was explained by the fact that keratitis that affects middle age group (21-50 years). These age groups were involved in active outdoor work, so there is greater chance of getting trauma and infection. In this study also found that age group of 51 to 60 years were showing 27.25% incidence which is higher than to Srinivasan M et al study which is showing incidence 13.75%[14] might be due to many predisposing factors like CDK, dryness, cataract surgery which probably predisposed this group to corneal ulceration. In our study out of 4 cases below 10years of age group. One was suffered from malnutrition, two were anaemic and one was conjunctival discharge. Out of which malnourished & one anaemic was manifested in form of xeropthalmia. This indicates that malnutrition in this age group more susceptible for infection and non healing corneal ulcer. This possibility cannot be denied in areas where poverty and illiteracy are quite responsible for prevalent as also are the condition in Chhattisgarh region.

In the present study sex wise distribution of the patients of non healing corneal ulcers was equal in both male (50%) and female (50%), ratio of 1:1. Similar finding in a study by **Upadhyay** et al males and females were found to be equally affected.[15] This might be due to small sample size and women <70 years were not reported to non healing corneal ulcer. It indicates due to women of this age group less involved in outdoor activity. Second finding that age group of 30 to 60 years of both sex, showing maximum number of incidence. This might may that both male and female of this age group were involved in outdoor activity and therefore susceptibility to trauma and infections. But some other studies showing finding unlike to our study, **Sharmeen Ahamad** et al shows that male 64.63% were affected more often (p<0.00) with male to female ratio being 1.8:1.[12]A study done by **Keshav BR** shows that 64.36% were males and 35.73% were females.[13]Another study done by **Shashi Gandhi** the prevalence rate was higher in male (52%) patients compared to female (48%)[9]. Male predominance was obviously because of the greater involvement of males in outdoor activity and therefore susceptibility to trauma and infection , this fact was explained by these study but present study explains the involvement of male and female in outdoor activity mainly depend on occupation pattern available in different geographical areas.

Highest incidence of non healing corneal ulcer was noted in housewives (43.7%).This might be due to the fact that housewives of rural areas participate in field works as frequently as male, as well as they don't bother to their problem and attained hospital when problem is severe due to poor health seeking behavior.38.75% cases were observed in farmers and 7.5% in labourers. These people were more exposed to injury, dust, wind etc, injury with vegetable matter, paddy lives is more likely in farmers. **Shareman Ahmad** et al shows that ocular trauma (agricultural and domestic injuries) was more associated with outdoor occupation. Among different occupation of study population, majority of patient (37.41%) were farmers, followed by housewives (27.17%), day laborers (13.6%), students (8.84%) and service workers (4.16%).[12] **Shashi Gandhi** et al study, found that 36%cases were of farmers, 23% cases of laborers,18% cases were of unemployed, rest 23% were other. [9]**Raj pal Gingh Punia** et al the major risk factors implicated in causation of fungal corneal ulcers include occupation farming.[10]**Neema** (1966) found 27.12% incidence in farmers closely followed by housewives 26%,[16] while in **P.Shiva Reddy** et al reported 55.5% corneal ulcers in agricultural workers and 19.4% in industrial workers[17],**Nahata et al**[18] and **Venugopal** et al[19] showed similar higher incidence of corneal ulcers in farmers finding 37.5% and 90.9% respectively. Thus our study corroborates with other studies regarding sex incidence and pattern seen in housewives and farmers.

It was noted that the maximum incidence (72.5%) of corneal ulcers was in poor class people followed by middle class people (23.75%).Only three cases were from high income group. Similar finding was found in **Shashi Gandhi** et al found that as per socioeconomic distribution, 76% cases belong to lower income group and 19% and 5% cases belong to middle and higher income group respectively.[9] A study by **Neema** et al that 80.7% ,incidence of corneal ulcer in poor class people.[16]**Behari and Shrivastava** et al found 74.4%, 18.8%, and 5.8% incidence of corneal ulcers in low ,middle and high socioeconomic group respectively.[20]This was because poor class people are frequently involved in agricultural work or work as manual labourers .They are not particulate regarding their personal hygiene, suffer from malnutrition and are exposed to dirt, dust and injuries due to their occupation. They live in small overcrowded places and they are late in getting proper treatment for early ocular involvement because of socioeconomic problem and poor complain.

CONCLUSION:

Present study explores the non healing corneal ulcer equally prevalence in both sex and those who were rural residence engaged in mainly agricultural activity belonging to low socioeconomic status. So there is need of promotion of health education & motivation of early health seeking behavior .

Acknowledge:
We would like to thanks all the faculty and staffs who help us during this study.

Conflict of interest: Nil

REFERENCES

1. http://en.wikibooks.org/wiki/wikijunior:human_body/eyes
2. Robert AM, William MH, Jr Adler. Physiologyof the eye, clinical application. Published by C.V Mosby Company, St. Louis, Missouri.Eighth edition, chapter 3, Pg no 36
3. Fungal keratitis (Journal articles 23,382 pdf) Anil Radhakrishnan M.S
4. Text book of Opthalmology fifth edition by A.K.Khurana
5. Corneal blindness :a global perspective John P. Whitcher,M.Shrinivashan & Madan P.Upadhay.7. Fungal keratitis (Journal articles 23,382 pdf) Anil Radhakrishnan M.S
6. Samar 12 basak at all Epidemiology diagnosis of suppurative corneal ulcer
7. Chhattisgarh fact sheet,Annual Health Survey 2011-2012,www.censusindia.gov.in
8. Study of epidemiological characters, predisposing factors and treatment outcome of corneal ulcer patients. Khare P1, Shrivastava M2, Kumar K ,et al 2014.,Department of Ophthalmology,Bundelkhand Medical College, Sagar,Madhyapradesh,India.Email-praveenkhare-77@rediffmail.com
9. Shashi Gandhi,1D K Shakya,Sonika Bansal, KP Ranjan, corneal ulcer: a prospective clinical and microbiological study, DOI: 10.5455/ijmsph.2014.030820142,KP Ranjan (drkpranjan@gmail.com)
10. Spectrum of fungal keratitis: clinicopathologic study of 44 cases, Clinicopathologic spectrum of mycotic keratitis, DOI:10.3980/j.issn.2222-3959.2014.01.21Rajpal singh Punia RS, Kundu R, Chander J, Arya SK, Handa U, Mohan H. I.J.Ophthalmology2014;7(1):114-117 email:India. reetukundu@gmail.com
11. Laspina F, Samudio M, Cibilis D, Ta CN, Farina N, Sanabria R, et al. Graefes Epidemiological characteristics of microbiological results on patients with infectious corneal ulcers: A 13 year survey in Paraguay, Arch Clin Exp Ophthalmology 2004; 242:204-209
12. Predisposing Factors and Aetiologic Diagnosis of Infectious Corneal Ulcer Sharmeen Ahmed1, Anamica Ghosh1, Syed A Hassan2, Shirin Tarafder1, Md. Ruhul Amin Miah11Department of Microbiology & Immunology, Bangabandhu Sheikh Mujib Medical University, Dhaka; 2Department of Cornea, Islamia Eye Hospital, Dhaka Bangladesh J Med Microbiol 2010; 04 (01): 28-31 Bangladesh Society of Medical Microbiologists

13. Epidemiological Characterstics of corneal ulcer in South Sharqiya Region ,Keshav BR, Zacheria G., Ideculla T., Bhat V., Joseph M , Oman Medical Journal 2008.volume 23,issue 1,January 2008.
14. Srinivasan M, Gonzales CA, George C, Cevallos V, Mascarenhas JM, Ashokan B, et al. Epidemiology and etiological diagnosis of corneal ulceration in Madurai, South India, BJO 1997; 81:965-971
15. Upadhyay MP, Karmacharya PC, Koirala S, Tuladhar NR, Bryan LE, Smolin G, et al. Epidemiologic characteristics, predisposing factors and etiological diagnosis of corneal ulceration in Nepal. Am J Ophthal 1991; 111:92-99
16. Neema Shukla,Nath,Ahuja and Gopi,Epidemiology of corneal ulcer,J.All.India.Opthal.Soc.22:1-9
17. Reddy.P.S.,Satyendra,O.M, Satapathy,M., Vijaya Kumar,H.and Reddy .P.R.,Micotic Keratitis Ind.j.Opth.20:101-108,1972
18. Nahata, M.C.,Shrivastava ,U,and Mahashabde, S.Micotic corneal Ulcers: a clinical study.J. All.Ind.Optha.Soc.78-80,1986
19. Venugapal.P.V.,Venugopal,T.V.,Gomathi,A,Ramkrishna,E.S.and ilavarasi,S,:micotic keratitis in Madras,ind.j.pathol.microbial.32:190-197,1989
20. Bihari and Shrivatava,D.Various factors in etiopatogenesis of galloping,corneal ulcer and their response to treatment.ind J.Opth.31:692-697,1983