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COMPARISON BETWEEN SUBCONJUNCTIVAL INJECTION INSTALLATION AND SOLELY EYE DROP METHOD IN CORNEAL ULCER PATIENTS CAUSED BY FUNGUS .

Ophthalmology

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ABSTRACT

Corneal ulcer is one of the major causes of blindness in the developing world. To prevent the blindness and other corneal complication proper understanding of treatment technique is vital. The present study deals with the comparison between subconjunctival injection installation and solely eye drop method in corneal ulcer patients caused by fungus and it might play an important position during treatment of corneal ulcer. This study was done in the Kamlesh Netralaya Hospital Ambikapur surguja C.G between the periods 2016-2017 in 100 eyes diagnosed with fungal corneal ulcer. Out of 100 eyes, 53eyes (43 males and 10 females) operated with subconjuctival injection installation method and 47 eyes (32 males and 15 females) treated with solely eye drop method and they lies between age group 20-60 years. Mean age in Subconjunctival injection installation method were 38.64, maximum age were 48 years and minimum age were 30 where in solely eye drop method mean age were 37.74, maximum age were 48 and minimum age were 31. Fungal cause corneal ulcer common in outdoor occupation i.e. farmer 63%, labour 16% and 7 % other as compare to indoor occupation. In this study Subconjunctival injection installation method was nil complication, good visual outcome, relieved from symptom immediately as compared to solely eye drop method.

KEYWORDS

corneal ulcer, fungus, Natamycine.

Cornea is the transparent refractive outer layer of eye consists of 5 layers i.e. epithelium, Bowman's layer, stroma, Descemet's membrane and the endothelium.1 Infection as well as breakage of epithelium and underlying stromal necrosis is known as corneal ulcer.2 Corneal disease is a chief causes of vision loss and monocular blindness in the world after cataract in a lot of developing nation like Asia, Africa and the Middle East.3 In 2003 hospitalization rate of corneal ulcer was 4.9 per million of population, where as in 2012 it was 2.7 per million.4 In tropical countries like India superficial corneal trauma is often in the farmer working in agriculture field due to direct exposure of eye to the environment, which may cause corneal ulceration.5 Corneal ulcer may be caused by bacteria, fungi, viruses and parasites. Etiopathological of fungus was first investigated by Gruby in 1847 6 and Leber (German ophthalmologist) in 1870 was first reported fungus "Aspergillus glaucus" from a eye of farmer suffer from corneal ulcer due to injured by oats chaff.7 The occurrence of fungal keratitis is low (6 to 20%) as compared to bacterial keratitis where as it may be greater in developing country. Fungal keratitis has been caused by 70 different fungi.8 Commonly reported fungi in India was Aspergillus species (27 to 64%), Fusarium species (6 to 32%) and Penicillium species (2 to 29%).9,10 Incidence of fungal keratitis common in males than females between the age group of 21-50 years.11 Proper history taking, management, diagnosis, treatment of corneal ulcer is very significant to cure the diseases.12

The purpose of present study was to comparison between subconjunctival injection installation and solely eye drop method in corneal ulcer patients caused by fungus.

MATERIAL AND METHODS:-

The present study undertaken in the Kamlesh Netralaya Hospital Ambikapur surguja C.G between the period of 2016-2017. This is an observational study. Total 100 eyes diagnosed with fungal corneal ulcer, out of which 53eyes (43 males and 10 females) operated with subconjuctival injection installation method and 47 eyes (32 males and 15 females) treated with solely eye drop method. All patients included in this study lies in the age group between 20-60 years. The patients having non fungal corneal ulcer, not willing to fill conscent form, neurotrophic ulcer, corneal degeneration and dystrophies were excluded from the study. Ophthalmic examination done by slit lamp examination shows CCC+, Corneal ulcer positive, hypopyon positive in anterior chamber, grading of severity done by DB jones criteria and location of ulcer shown in Fig.1 and 2. Routine laboratory investigation, Fluorescein staining, syringing antibiotic drop test were done to see the patency of nasolacrimal duct shown in Fig.3 and 4.

After diagnosis of fungal corneal ulcer patient were shifted in the ward for treatment. Every patient have to fill a standard proforma consent form which included history, age, sex, occupation (Outdoor, Indoor) etc after explaining the procedure.

In subconjunctival injection installation method The Patient was shifted to the minor operation theater placed in supine position in operation table. 4% xylocane drop used to anesthesia . Wire speculum placed and 0.2ml subconjunctival injection given in BCG syringe which contain (atropine +adrenaline+dexamethasone+2%xylocane) shown in Fig.4. Natamycine and Moxifloxacin eye drop installed shown in Fig.5. Ciproxaline ointment applied, pad and bandage done. Then patient shifted in ward. Next day pad and bandage opened. Antibiotic moxifloxacin and natamycin eye drop started one hourly. Atropine eye drop given 3 times a day and ointment applied at night. Anti-inflammatory and antibiotic tablet were given for 5 days. 1st follow up were done after 3 days, 2nd after 7 days and 3rd after 1 month.

In solely eye drop method The Patient was instructed to use Antibiotic moxifloxacin and natamycin eye drop in one hourly interval. Atropine eye drop given 3 times a day and antibiotic ointment applied at night. Anti-inflammatory and antibiotic tablet were given for 5 days. 1st follow up were done after 3 days, 2nd after 7 days and 3rd after 1 month. Finally Healed corneal ulcer data recorded shown in fig.06.

RESULT:-

The present study was done on 100 eyes diagnosed with Fungal caused corneal ulcer. All patient lies in the age group of 20-60 years were included for this study out of which 53 eyes (43 males and 10 females) treated with Subconjunctival injection installation method and 47 eyes (32 male and 15 female) treated with solely eye drop method. Mean age in Subconjunctival injection installation method were 38.64, maximum age were 48 years and minimum age were 30 where in solely eye drop method mean age were 37.74, maximum age were 48 and minimum age were 31 shown in table no.1.

In this study 86 (86%) patients eye having outdoor occupation i.e. 63% patients were farmer , 16% were labour and 7% were other were as 14 (14%) patients eye having indoor occupation i.e.10% patients were housewife, 2%were office worker, 2% were other shown in Table no.02.

In our study patients shows following symptoms they are Blurred vision (90 cases) followed by Sensation of Foreign Body (89 cases), Redness (85 cases), Pain (71 cases), Photophobia (60 cases) and Headache (50 cases) shown in table no.03.

Complication rate in Subconjunctival injection installation method were Nil and in solely eye drop method complication occur in 3 patients eye in this study.

DISCUSSION:-

Corneal ulcer is a visions threatening, severe eye problem and may cause of monocular blindness if treatment not done. Fungus like Fusarium and Aspergillus genera is one of the chief causes of corneal ulcer in india13. The cases of fungal corneal ulcer increase during monsoons and early winter i.e. during harvesting season, spring, winter14 but it is decrease during temperate climate 18,19. This study reveals the comparison between subconjunctival injection installation and solely eye drop method in corneal ulcer patients caused by fungus. Fungal corneal ulcer doesn't have any gender distribution but it is common in male due to more necessities in outdoor activities like farmer, housemaker, labour etc. In this study, the incidence of corneal ulcer is more in male i.e. 75 patients compare to female i.e.25 patients which correlate with the study of Sharma S et al10, Behboody H et al15, Norina TJ et al[16].

In our study maximum number of patient were in age group between 31-40 yrs which correlate with the study of Kanishtha Sharma et al 17, Thomas PA11. In our study, incidence of fungal caused corneal ulcer more in outdoor occupation i.e. 63% farmer followed by16% Labour and 7% other than indoor occupation i.e. 10% housewife followed by 2% office worker and 2% other occupation which also seen in the study of Kanishtha Sharma et al 17, K. Ravinder et al [20].

In this study, Symptoms for fungal caused corneal ulcer are blurred vision 90%, Pain 71%, redness 85%, Photophobia 60%, headache 50% and sensation of foreign body 89% which nearly correlated with the study of Kanishtha Sharma et al17. In Subconjunctival injection installation method rate of complication was nil as compare to solely eye drop method shown in Table no.03.

CONCLUSION:-

In present study I observed that subconjunctival injection installation Technique having minimum or nil complication, good visual outcome, relieved from symptom immediately as compared with solely eye drop method. Incidence was common in patient having outdoor occupation compare to indoor. Hence, this studies useful for ophthalmologist, Clinicians, microbiologist for proper clinical diagnosis and treatment of disease.

Acknowledge:-

We would like to thanks all the staffs, faculty who supported us during this study.

Conflict of interest: - Nil

Table No.1:-Distribution of fungal caused corneal Ulcer Based On Age And Gender

Age	Subconjunctival injection installation		solely eye drop method	
	Male	Female	Male	Female
20-30year	1	1	-	-
31-40year	28	5	23	12
41-50year	14	4	9	3
51-60year	0	0	0	0
No. of eye	43	10	32	15
Total no. 0f eye	53	47		
Mean Age	38.64	37.74		
Maximum	48	48		
Minimum	30	31		

Table No.2:-classification based on occupation.

Technique	No. of Eye	Occupation (%)					
		Outdoor			Indoor		
		Farmer	Labour	Other	House wife	Office Worker	Other
Subconjunctival injection installation	53 (53%)	38 (71.69%)	7 (13.20%)	3 (5.6%)	3 (5.6%)	1 (1.8%)	1 (1.8%)
solely eye drop method	47 (47%)	25 (53.19%)	9 (19.14%)	4 (8.5%)	7 (14.89%)	1 (2.12%)	1 (2.12%)
Total	100 (100%)	63%	16%	7%	10%	2%	2%
		86 (86%)	14 (14%)				

Table :-3. Detail of fungal caused corneal ulcer Symptoms

Corneal Ulcer Symptoms	No. of cases
Blurred vision	90/100(90%)
Pain (Circum Ciliary Congestion)	71/100(71%)
Redness	85/100(85%)
Photophobia	60/100(60%)
Headache	50/100(50%)
Sensation Of Foreign Body	89/100(89%)

Table:-4. Response to treatment Healed

Technique	Healed	complication	
Subconjunctival injection installation method	53	Nil	
solely eye drop method	44	03	Vision Threatening
			, Endophthalmitis
			Adherent Leucoma
Total	97	03	



Fig:-1.Corneal Ulcer with Hypopyon.

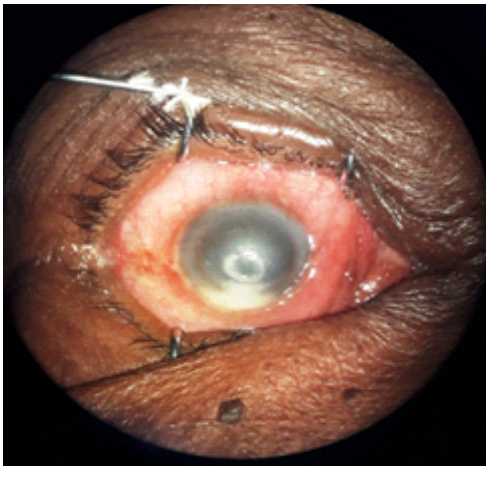


Fig:-2. Corneal Ulcer with Hypopyon

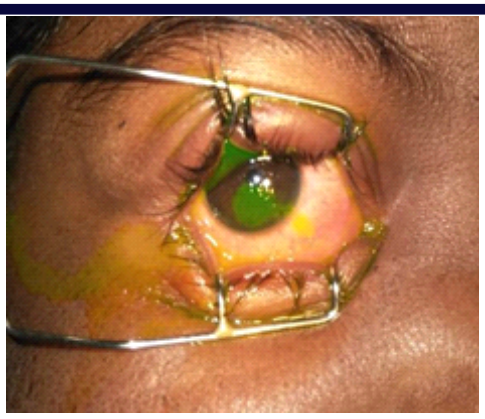


Fig:-3. Flourescein stain



Fig:-4.Fluorescein strip with BCG syringe



Fig:-5. Subconjunctival Installation of natamycin injection

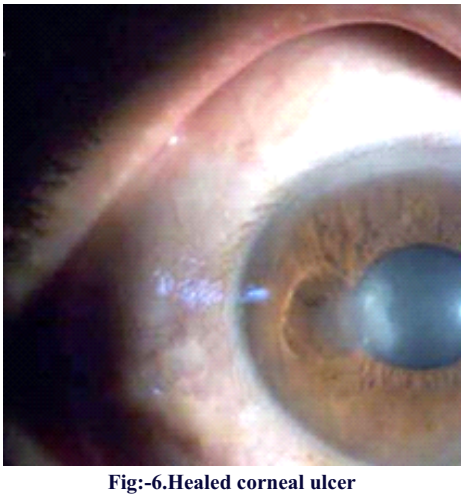


Fig:-6.Healed corneal ulcer

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