Original Research Paper

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A CLINICAL STUDY ON KERATOMYCOSIS IN PATIENTS ATTENDING TERTIARY CARE HOSPITAL

Dr. N. Ramabharathi* M.S Professor and In charge HOD,RMC, Kakinada*Corresponding Author

Dr. Anusha Dappodi Junior resident in M.S,Ophthalmology,RMC,Kakinada

Dr. M.V. Bhavani M.S Assistant Professor RMC, Kakinada

ABSTRACT

AIM : To study etiology , epidemiological factors leading to keratomycosis in various subgroups of population like different age and sex groups. To determine spectrum of ocular manifestations in patients with keratomycosis. METHODS : This is a prospective study done in 100 patients of fungal keratitis over a period of 1 year with proper recordings of snellens visual acuity chart, slit lamp biomicroscopy, direct and indirect ophthalmoscopy, confirmed by culture, histology and confocal microscopy, PCR, in patients attending tertiary care hospital , kakinada. **RESULTS :** This study was conducted in 100 patients , of most common age group was 31-40 years i.e, which most exposed to trauma to cornea with vegetative matter, immunocompromised people, over usage of steroids and antibiotics and many factors. Males are more affected and among agricultural workers with mostly unilateral in presentation. Majority presented with pain, redness , foreign body sensations, defective vision. Ulcer is dirty looking, feathery margins with wessely ring and satellite lesions. **CONCLUSION:** Fungal infections of cornea continue to be an important cause of ocular morbidity, particularly in the communities of agriculture of developing countries. A proper understanding of agent and host factors involved in these infections will improve the outcome of this condition.

KEYWORDS :

INTRODUCTION

Microbial keratitis is usually caused by bacteria, fungi, virus and protozoa. Fungal keratitis was first documented in 1879 and its incidence has been increasing. Relatively infrequent in developed world compared to large proportion of keratitis in developing world. Fungi are a group of microorganisms that have rigid walls and a distinct nucleus with multiple chromosomes containing both DNA and RNA.

Fungal keratitis is a serious condition that if not treated properly can lead to corneal destruction and endophthalmitis with severe loss of vision. Fungal species are classified as filamentous fungi, yeast and dimorphic types. Filamentous type species are more common. Depends on several factors including personal risk factor, climatic conditions, geographic location and urbanization.

Most prevalent personal risk factors are trauma with vegetative matter, immunocompromised state, ocular surface disease and contact lens wear.

Clinically, this is a challenging to diagnose a fungal infection as a cause of keratitis. Diagnostic delays are common. A high suspicion is required depending on the presence of specific risk factors for fungal keratitis. Management is also challenging as many antifungal agents have poor penetration into the cornea. We believe, however, that ophthalmologists are now diagnosing keratomycosis earlier and treating it more effectively.

AIM : To study etiology , epidemiological factors leading to keratomycosis in various subgroups of population like different age and sex groups. To determine spectrum of ocular manifestations in patients with keratomycosis.

METHODS : It includes study settings, sample frame, study design, study period, sample size, sampling technique, data collection,ethical considerations

All patients with visual disturbances attending ophthalmology out patient department, Government General Hospital, Kakinada will be enrolled for study after written and informed consent will be taken from patient regarding the study in his/her vernacular language.

Clinical examination of the patient include a detailed general physical examination. Routine investigations like Blood sugar, blood pressure and urine analysis done.This is a prospective study done in 100 patients of fungal keratitis over a period of 1 year with proper recordings of snellens visual acuity chart, slit lamp bio microscopy, direct and indirect ophthalmoscopy, confirmed by culture, histology and confocal microscopy, PCR, in patients attending tertiary care hospital , kakinada.

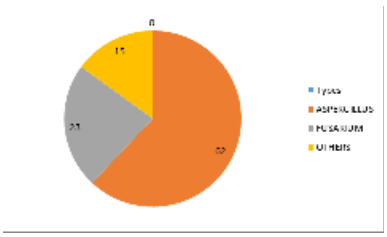
RESULTS

Most common organism is ASPERGILLUS of 62% , fusarium - 23% and other fungal species- 15%

TABLE -1 RESULTS OF ETIOLOGY OF FUNGAL KERATITIS : (n=100)

Types	Number of cases	Percentage
ASPERGILLUS	62	62%
FUSARIUM	23	23%
OTHERS	15	15%
TOTAL	100	100%

RESULTS :



Among age distribution , most common age group is around 31 to 40 year and least age group is younger age groups.

TABLE-2 AGE DISTRIBUTION OF FUNGAL KERATITIS : (n=100)

AGE GROUP	Number	Percentage
1-10	3	3
11-20	8	8
21-30	12	12
31-40	24	24
41-50	22	22
51-60	15	15
>60	16	16
TOTAL	100	100

AGE DISTRIBUTION OF FUNGAL KERATITIS : (n=100)

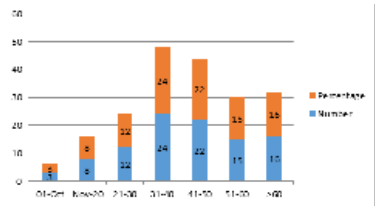
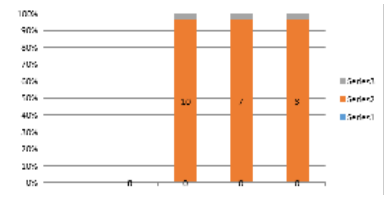


TABLE-3 AGE DISTRIBUTION AMONG TYPS OF FUNGAL KERATITIS: (n=100)

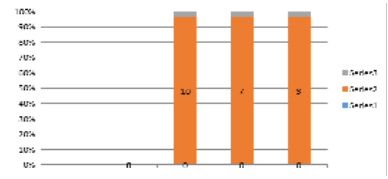
AGE GROUP	aspergillums	Fusarium	Others
1-10	2(2%)	Nill	1 (1%)
11-20	5 (5%)	1	2(2%)
21-30	8(8%)	2	2(2%)
31-40	16 (16%)	5	3(3%)
41-50	15 (15%)	4	3(3%)
51-60	9(9%)	2	4(4%)
>60	7(7%)	9	Nill
TOTAL	62 (62%)	23	15(15%)



Males are most commonly affected.

TABLE-4 Sex distribution of fungal keratitis: (n=100)

Sex	Number	Percentage
Male	64	64%
Female	36	36%
TOTAL	100	100%



Mostly Agricultural field workers and out door workers are affected due to trauma causing by vegetative matter

TABLE-5 DISTRIBUTION OF CASES DEPENDING ON OCCUPATION

Occupation	Number	Percentage
Agriculturers	45	45%
Out door workers	20	20%
Students	25	25%
Others	10	10%
TOTAL	100	100%

Distribution Of Cases Depending On Occupation

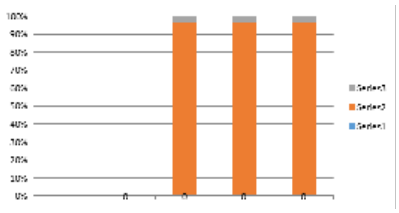


TABLE-6 LATERALITY

Unilateral condition is most common than bilateral condition

Laterality	Number of cases	Percentage
Unilateral	74	74%
bilateral	26	26%
TOTAL	100	100%

Fungal ulcers have greyish white, dirty looking ulcers with elevated and rolled out margins with indistinct , feathery margins consists of necrotic base, sterile immune ring and satellite lesions and unsterile and fixed hypoyon.

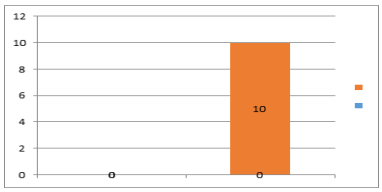
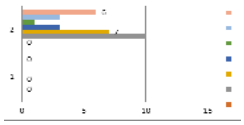


TABLE-7 Pattern of lesions in fungal keratitis(n=100)

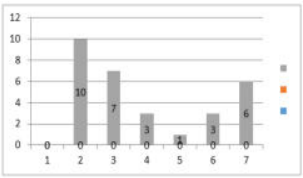
Lesion	Number	Percentage
Greyish white, dirty look	26	26%
Elevated and rolled out margins	22	22%
Indistinct and feathery margins	13	13%
Pigmented ulcers	4	4%
Sterile immune ring	11	11%
Satellite lesions	10	10%
Hypoyon -unsterile and fixed	14	14%
TOTAL	100	100%



Most of the patients complaints of pain, redness and foreign body sensations.

TABLE -8 Presenting complaints

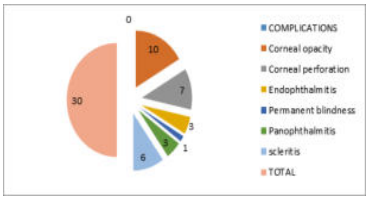
Presenting complaints	Number of cases	Percentage
Redness	43	43%
Foreign body sensation	21	21%
Diminution of vision	09	09%
Photophobia	16	16%
watering	11	11%
TOTAL	100	100%



Most common complication is corneal opacity.

TABLE-9 COMPLICATIONS IN FUNGAL KERATITIS

COMPLICATIONS	Number of cases	Percentage
Corneal opacity	10	33.33%
Corneal perforation	07	23.33%
Endophthalmitis	03	10%
Permanent blindness	01	3.3%
Panophthalmitis	03	10%
scleritis	06	20%
TOTAL	30	100%



DISCUSSION

This clinical study of fungal keratitis is done in 100 patients with incidence more in males compared to females among various types. Condition is more common in age group of 31-40 years (adulthood) and least common in age group of 1-10 years.

Filamentary fungus causes more fungal keratitis in tropical regions i,e aspergillus, fusarium and yeast species- candida most common in temparate regions. Aspergillus is the most common fungus causing fungal keratitis.

Fungal ulcers have mostly greyish white, dirty looking ulcers with elevated and rolled out margins.Ulcer margins are indistinct and feathery. Base of ulcer is necrotic, hypopyon is unsterile and fixed as it contains fungal hyphae. Commonly associated features are ulcer surrounded by a ring called immune ring and contains multiple small ulcer - satellite ulcers.

Initially it affects one eye (Unilateral condition ,74%) followed by other eye.Among occupation - Agricultural workers(45%) and outdoor workers are commonly affected. Mostly trauma with vegetative matter.

Patients mostly present with complaints of redness, foreign body sensation and photophobia. Among the complications of fungal keratitis , more common in corneal opacities (33.33%) and least is permanent blindness.

CONCLUSION

Fungal infections of cornea continue to be an important cause of ocular morbidity, particularly in the communities of agriculture of developing countries. A proper understanding of agent and host factors involved in these infections will improve the outcome of this condition.

Early diagnosis by differentiating it from other keratitis, selective appropriate theraphy helps to prevent potential sight threatenting conditions and further complications. Educating the patient and their families about nature of disease , treatment ,options, symptoms, risk factors for recurrences and importance of short-term and long-term follow up is helpful.

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Nil
Conflicts of interest :
There are no conflicts of interest.
Ethical issues :
Approved by ethics committee

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