ORIGINAL ARTICLE

INCIDENCE OF CURVULARIA ORGANISM IN MYCOTIC CORNEAL ULCER
K. Anjaneyulu¹, Balla Vidya Sagar²

HOW TO CITE THIS ARTICLE:

ABSTRACT: Study about curvularia organism in corneal ulcer conducted at REH Kurnool in coordination with Microbiology Department. After taken scrapings from corneal ulcer and inoculated in culture media at microbiology department and KOH preparation and Gram's staining done. After culture the organism isolated from growth and prepared the slide and examined under microscope. A curvularia species data collected and analyzed that there was Low incidence of curvularia organism were detected.

AIMS AND OBJECTIVES: To study the occurrence of corneal ulcers in different age groups and distribution of fungal corneal ulcer in relation to sex, occupation, and causative agents and morphological type corneal ulcer and also to know the effect of Natamycin and fluconazole as antifungal agents.

MATERIAL AND METHODS:
1. Topical 4% lignocaine Hydrochloride used for anaestheting cornea and preserved later in a cool place.
2. Sterile universal speculum to get good exposure of ulcerated cornea and also to prevent contamination from conjunctiva and lid margins.
3. Disposable No.15 blade for scraping the ulcer.
4. Glass slides must be cleaned and grease free.
5. Gram’s staining of allied materials.
6. KOH 10% preparation of allied materials.
7. Sterile culture swabs for collection of specimen and further processing for aerobic organisms for blood agar and chocolate agar plates for anaerobic organisms thioglycolate broth and saubraud’s agar media for fungi.

METHODS: Anaesthetising the cornea by instillation of 4% lignocaine drops one drop every one minute for five to ten minutes. Exposure of the cornea: by using sterile universal speculum.

OBSERVATIONS AND DISCUSSION:

INCIDENCE OF CORNEAL ULCERS: A total number of 2776 patents attended the out-patient eye department of Govt. Regional Eye hospital out of which corneal ulcers was seen in 193 cases (0.72%). From a total of 193 corneal ulcers keratomycosis were encountered in 42 cases. (0.16%) of total out-patient department cases as per table I.
Table 1: INCIDENCE OF CORNEAL ULCERS AND KERATOMYCOsis

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Total Number of Cases</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPD Patients</td>
<td>26766</td>
<td>100%</td>
</tr>
<tr>
<td>Corneal Ulcers</td>
<td>193</td>
<td>0.72%</td>
</tr>
<tr>
<td>Keratomycosis</td>
<td>42</td>
<td>0.16%</td>
</tr>
</tbody>
</table>

**AGE INCIDENCE:** The age incidence of keratomycosis in the present study depicts as per table 2 highest incidence occurred in the age group of 31-61 years. While it is minimal in the very young patients 0-10 years and very old above 60 years age. The patients age group between 11-20 years were only 5 in number out of the 42 cases

<table>
<thead>
<tr>
<th>Age group in years</th>
<th>No. of cases of keratomycosis</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>1</td>
<td>2.338%</td>
</tr>
<tr>
<td>11 - 20</td>
<td>5</td>
<td>11.90%</td>
</tr>
<tr>
<td>21 - 30</td>
<td>7</td>
<td>16.66%</td>
</tr>
<tr>
<td>31-40</td>
<td>11</td>
<td>26.11%</td>
</tr>
<tr>
<td>41-50</td>
<td>7</td>
<td>16.66%</td>
</tr>
<tr>
<td>51-60</td>
<td>10</td>
<td>23.80%</td>
</tr>
<tr>
<td>60 and above</td>
<td>1</td>
<td>2.338%</td>
</tr>
</tbody>
</table>

Table 2: Age incidence of keratomycosis

Table 3: INCIDENCE OF CULTURE OF BACTERIAL, FUNGAL AND STERILE ULCERS

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>No. of Ulcers</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fungal Positive</td>
<td>42</td>
<td>21.7%</td>
</tr>
<tr>
<td>2.</td>
<td>Bacterial Positive</td>
<td>98</td>
<td>50.7%</td>
</tr>
<tr>
<td>3.</td>
<td>Culture Negative</td>
<td>53</td>
<td>27.5%</td>
</tr>
</tbody>
</table>

Table 4: INCIDENCE OF ULCERS ONLY FOR ONE FUNGUS OR MORE THAN ONE FUNGUS OR BACTERIAL AND FUNGUS

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>No. of Ulcers</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cultured Only One Fungus</td>
<td>37</td>
<td>88%</td>
</tr>
<tr>
<td>2.</td>
<td>More Than One Fungus</td>
<td>1</td>
<td>2.3%</td>
</tr>
<tr>
<td>3.</td>
<td>Bacterial and Fungus</td>
<td>4</td>
<td>9.5%</td>
</tr>
</tbody>
</table>
**Sl. No.** | **Fungus Encountered** | **No. of Times Encountered** | **Percentage (%)**
--- | --- | --- | ---
1. | Aspergillus species. A) Asp. flavus B) Asp. fumigatus C) Asp. Nigar | 21 09 07 05 | 50% 0%
2. | Candida Albicans | 06 | 14.2%
3. | Pencillium species | 05 | 11.9%
4. | Rizopus | 02 | 4.7%
5. | Cephalosporium | 03 | 7.1%
6. | Fusarium species | 03 | 7.1%
7. | Curvalaria species | 02 | 4.7%

**Table 5: Types of fungi isolated in the present series of keratomycosis**

**Sl. No.** | **Fungus with bacteria** | **Number of cases**
--- | --- | ---
1. | Aspergillus fumigatus with Klebsiella species | 2
2. | Aspergillus nigar with coagulase +ve staph. cocci | 2

**Table 6: Bacterial encountered along with fungi**

<table>
<thead>
<tr>
<th><strong>Sex</strong></th>
<th><strong>No. of cases</strong></th>
<th><strong>Percentage (%)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>29</td>
<td>69%</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
<td>30.9%</td>
</tr>
</tbody>
</table>

**Table 7: Sex incidence of keratomycosis**

**End result** | **Number of cases** | **Percentage**
--- | --- | ---
Healing with corneal opacities and with adehrent leucoma and secondary glaucoma | 19 | 45.23%
Complicated cataract | 16 | 38.09%
Perforation with phthisis | 04 | 9.523%
Ulcer necessiating evisceration | 03 | 7.142%

**Table 8: End results after treatment of cornea ulcers**

**Discussion:** In the present study fungal corneal ulcers are found to be higher as compared to P. Siva Reddy et al (i.e, 0.06%). It may be due to indiscriminate use of local steroids and higher antibiotics following agricultural injury to the eye now-a-days.

Regarding age incidence highest incidence occurred in the age group of 31-60 years. While minimal 0 – 10 years and above 60 years.
The incidence of fungal ulcers in the present series is found to be 21.7%. Incidence of ulcers for one fungi or more than one fungi or both bacteria and fungus occurred.

The highest incidence of fungi in the study are Aspergilus Species fifty percent (50%). Next higher incidence was candida albicans (14.2%) and lowest incidence was curvalaria infection i.e., 4.7%.

The higher incidence in males due to greater exposure to outdoor activities and promont attendance of males in hospitals because of they are the breadearners. Higher incidence in the females blame the use of cosmetics like kajal or surma in the causation of keratomycosis.

Present study shows that Natamycin 5% eye drops are effective against Aspergilus, penicilium, rizopus, cephalosporium and fusarium species. Fluconazole effective against the candida albicans. Fungal corneal Ulcers without Hypopyon exhibited good response to Natamycin 5% eye drops.

**SUMMARY AND CONCLUSION:** This study comprises of total number of 193 cases of corneal ulcers screened out of 26766 patients attending the Regional Eye Hospital, Kurnool. (AP). Out of 193 cases 42 cases showed positive fungal culture in saubraud’s media. Incidence of disease was high in 31-60 years age group.

This explained by the fact that the people in this age group are commonly exposed to trauma due to outdoor activities.

Keratomycosis is more common in males (69%) than females (30.9%) because of greater exposure to outdoor activities and prompt attendance males in hospitals. In case of females they work in the field during harvesting period and are equally susceptible for agricultural injuries thus giving rise to a sizeable number of cases.

In the present study of keratomycosis due to candida albicans responded favourably use of fluconazole 0.3% eye drops. Mycotic Keratitis caused by Aspergilus, Penicilium, Fusarium, Rizopus and Curvalaria are responded favorably to Natamycin 5% eye drops. The filamentous fungi are responded well to Natamycin 5% eye drops.

The end result of large percentage of cases ended with Leucomas and evisceration and hence visual prognosis were found to be poor.

Lack of broadspectrum antifungal medicines for ophthalmic use was a depressing observation. Steps to improve ophthalmic care and treatment in the periphery and rural areas should also be taken to lower the incidence of keratomycosis along with other ophthalmic diseases.

**BIBLIOGRAPHY:**

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