

International Conference on

OPHTHALMOLOGY

March 28, 2024 | London, UK

Clinical and microbiological profile of bacterial and fungal suspected corneal ulcer at University of Gondar Tertiary Eye Care and Training Centre, Northwest Ethiopia

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Background: A corneal ulcer is a major cause of monocular blindness in developing countries, including Ethiopia. Therefore, the main objective of this study was to assess the clinical and microbiological profile of suspected bacterial and fungal corneal ulcers at Gondar University.

Methods: A cross-sectional hospital-based study of corneal ulcer cases was performed from February to October 2019. Sociodemographic and clinical data were collected using a standardized questionnaire. Corneal scrapings were used to classify bacterial and fungal pathogens. The specimens were inoculated on BHI media and sub-cultured on culture media. Biochemical tests have been carried out to classify bacteria. Following CLSI, the antimicrobial resistance pattern of bacterial isolates was carried out. Wet mounting, Lactophenol cotton blue staining, and colony characteristics on SDA were used to classify fungal species.

Results: A total of 30 suspected bacterial and fungal

keratitis patients have been enrolled in this study. The visual acuity presented in 90% of the affected eyes was blindness (<3/60). In 71% of the cases, clinically presumed risk factors were identified. Trauma was the most common risk factor in 46% of cases, followed by keratitis exposure (13%). Of the corneal scrape tests, 76.6% were positive for bacteria and fungi. Fungi were identified in 53.3% corneal ulcers, followed by 33.3% of bacterial growth. The commonest fungi and bacteria isolated were *Aspergillus* species (69%) and *S. aureus*. The prevalence of Methicillin-resistant *S. aureus* (MRSA) was 2 (40%). The *Pseudomonas* species were susceptible to Gentamicin and Ciprofloxacin but resistant to Ceftriaxone. Conclusion. The primary microbial agents for corneal ulcers were fungi, and trauma was the most significant risk factor associated with corneal ulcers. To avoid chronic ocular morbidity and blindness, early identification of the etiologic agent and adequate management are recommended.

Biography

I have been studying for my MSc in Medical Microbiology from the University of Gondar. I am doing my PhD in Translational Medicine at CDT-Africa. I have been worked as a chief Medical Microbiologist and Lecturer of Medical Microbiology at the University of Gondar. During my work experience, I have gained extensive experience in the clinical laboratory, lecturing, and in different research areas. I have also participated in Laboratory Quality Management systems (LQMS) for TB prevention and control. I led the health centre laboratory for three years. I have worked as a research assistant for Trachoma Impact Survey (TIS); Sanitation, Water, and Instruction in Face-Washing for Trachoma (SWIFT) trial in the Amhara region of Ethiopia led by the Carter Center and the University of California San Francisco.