Epidemiological profiles and microbiological agents of microbial keratitis in Johor state, Malaysia

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ABSTRACT

Introduction: Microbial keratitis is an eye threatening condition which requires immediate treatment especially when the infection sets in due to ocular trauma or contact lens usage. This study aimed to describe the epidemiology and microbiological profile and risk factors of microbial keratitis. **Materials and Methods:** A cross-sectional study was conducted for 18 months involving patients aged 18 years and above with suspected microbial keratitis attending the eye clinic in selected government hospitals in Johor, Malaysia from June 2019 till December 2020. Patients' data such as age, gender, occupation, risk factors, aetiological agent and symptoms at the point of diagnosis were collected either from the medical notes in the Ophthalmology Clinic or from the patients' records. Patients' details consist of positive and negative data from the microbiology laboratories. Any missing data such as occupation and risk factors were obtained by calling the respective patient. All data were analysed statistically using SPSS version 26. Descriptive statistics used for analysing socio-demographic factors, risk factors and to determine the proportion of aetiological agents whereas Chi-Square analysis used to find association between socio-demographic factors, risk factors and microbial keratitis. **Results:** A total of 276 patients' data were collected and analysed. Out of 276, 69.2% were males with an overall mean age of 42.03 (SD17.2). Office workers are the most affected occupation category (n=50, 18.1%). Among 276 identified cases, ocular trauma is the most commonly identified risk factor (n=153, 55.4%). Out of 276 patients, 120 (43.5%) patients had culture-proven microbial keratitis in which 74.2% had bacterial keratitis and 22.5% had fungal keratitis. *Pseudomonas aeruginosa* was the predominant isolated bacteria (n=55), whereas *Fusarium spp.* was the most common isolated fungus (n=7). In addition, there was significant associations observed between construction workers (p=0.019), retirees (p=0.054), ocular trauma (p=0.005), previous eye surgery (p=0.018), ophthalmic steroid usage (p=0.052) and microbial keratitis. **Conclusion:** The proportion of microbial keratitis in the southern region of Malaysia was nearly half of the suspected cases in which bacterial keratitis was more prevalent than fungal keratitis. The information from this study contributed additional data on the epidemiology of microbial keratitis in Malaysia. The most common risk factor identified in this study was ocular trauma, this important information will be conveyed to the ophthalmologists so that prompt treatment and prevention can be applied to reduce the incidence of ocular trauma and microbial keratitis. Future studies are recommended to be extended to a larger group of the population from the different geographical areas in Malaysia.