

## **Microbial contamination of extended use ophthalmic drops in ophthalmology clinic**

### **ABSTRACT**

**Purpose:** The objectives of this study were to determine the prevalence of microbial contamination of multi-user preserved ophthalmic drops (POD) in Ophthalmology Outpatient Clinic (OOC), to compare the rate of contamination between the dropper tip and the residual contents in the bottle, and to identify the contaminating organisms. **Methods:** This was an observational cross-sectional study using a convenience sampling method conducted in the OOC of Universiti Kebangsaan Malaysia Medical Center, Malaysia. The samples of POD bottles were divided into groups obtained after 14 days (T14) and after 30 days (T30) of use. The contamination rate at the dropper tip and in the residual contents was determined and the contaminating organisms were identified. **Results:** A total of 140 of 149 extended-use POD bottles were included. The prevalence of contamination was 30%. There was a statistically significant difference in the rate of contamination between samples T14 and T30 (19% and 11%, respectively;  $p=0.046$ ). Proparacaine and tropicamide showed higher contamination rates in the T14 samples ( $p=0.027$  and  $p=0.497$ , respectively) than in the T30 samples. The site of contamination was higher at the dropper tip than in the residual contents ( $p>0.05$ ). Coagulase-negative Staphylococcus species were the most frequently identified contaminants (89%). **Conclusion:** The dropper tip was more contaminated than the residual contents, and coagulase-negative Staphylococcus species, which are common commensal flora of the ocular conjunctiva and skin, were the most frequently identified organisms.