Microbial Contamination of Soft Contact Lenses and Accessories in Asymptomatic Contact Lens Wearers

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Background

Soft contact lenses are finding more users by the day, who often opt for using contact lenses without being aware of the proper usage and handling instructions leading to their contamination and thus, the incidence of contact lens induced infections is also increasing.

Aims & Objectives

To assess the risks associated with improper use of contact lenses, type of microbial flora involved and their potential to cause ophthalmic infections to create awareness among the lens users.

Materials & Methods

Four samples each from 50 participants (n=200) were collected from the lenses, lens care solutions, lens care solution bottles and lens cases along with a questionnaire regarding their lens use practices. The samples were cultured on Sheep Blood agar and Mac Conkey's agar and Sabouraud's dextrose agar. Gram positive organisms were identified using tests like catalase and coagulase tests while Gram negative organisms were identified using catalase, oxidase test, sugar fermentation tests and IMVIC test using standard laboratory protocols.

Results

Overall rate of microbial contamination amongst total samples was 52%. The most contaminated sample was found to be lens case (62%), while the least contaminated sample was lens care solution (42%). The most frequently isolated contaminant was Staphylococcus aureus (21%) followed by Pseudomonas species (19.5%). The participants were classified according to their level of compliance to the lens care protocol into three groups, i.e. High, Medium and Low. Majority (64%) of the participants showed medium grade of compliance to lens cleaning practices. Rate of contamination was 100% and 93.75% respectively in those participants who showed low and medium compliance to lens care practices.

Conclusions

Lens care practices amongst the participants were not optimum which resulted into high level contamination obtained in them which is potentially harmful. Hence increased awareness among the users about the lens care practices and regular cleaning and replacements of lens cases is warranted.