The true toll of microbial bioburden on extended wear contact lens wearers

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I, like many people, have a hectic schedule, and I am in constant search of finding new ways to make my life easier. As an eye care practitioner, you likely often give your patients one new way to do this by fitting them in extended wear (EW) contact lenses. While EW is considered safe, it does not come without added risk compared to daily-wear contact lenses. In fact, EW increases your patients' risk for conditions such as asymptomatic infiltrates (AI), contact lens-related red eye (CLARE), and microbial keratitis (MK). While it may not seem obvious, bacteria have been associated with all of these pathologies.

The following organisms are associated with the listed EW complications:
- Contact lens-induced peripheral ulcers associated with coagulase negative staphylococci and Corynebacterium spp.
- CLARE associated with Haemophilus spp.
- AI associated with Corynebacterium spp.
- MK associated with Staphylococcus aureus and Pseudomonas aeruginosa.

The following events or sequelae are associated with bacterial involvement in EW complications:
- Adhesion of bacteria to contact lenses promotes inflammation and infection.
- Bacteria lead to polymorphonuclear leukocytes invading the anterior corneal stroma.
- Bacteria lead to increased production of cytokines and chemokines.
- Bacteria-associated infections and inflammation can lead to pain, redness, light sensitivity, irritation, microcysts, corneal edema, ulcers and scars, hypopyon, and vision loss.

While serious complications such as MK are relatively rare (1 in 500 wearers/year), conditions such as AI are encountered on a regular basis (up to 44 per 100 wearers/year) in EW contact lens patients. Bacterial involvement in the above conditions reinforces the need to provide antibacterial coverage as part of your treatment for contact lens complications. It also stresses the need for you to educate your patients about the risks associated with EW and the importance of patient compliance.

References:

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