The Resistance Patterns of Normal Ocular Bacterial Fora to 4 Fuoroquinolone Antibiotics

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PURPOSES: The purposes of this study were to determine the normal ocular bacterial flora isolated from patients undergoing anterior segment surgery and to evaluate their in vitro susceptibility to ciprofloxacin, levofloxacin, gatifloxacin, and moxifloxacin.
METHODS: During January 2006 to December 2006, conjunctival swabs taken from 385 eyes were inoculated onto 5% blood agar plates. The isolated bacteria were classified by analysis of 16s ribosomal DNA sequencing. Disk diffusion testing was performed in accordance with Clinical and Laboratory Standards Institute Performance Standards. RESULTS: Three hundred sixty-three microorganisms were isolated in 291 samples from 385 eyes. Gram-positive species predominated (89.8%, 326 of the 363 isolates), and Staphylococcus epidermidis was the most frequently isolated organism, accounting for 60.6% (220 of the 363 isolates). For 293 gram-positive isolates, the prevalence rates of in vitro resistance to ciprofloxacin, levofloxacin, gatifloxacin, and moxifloxacin were 22.2% (65 isolates), 11.6% (34), 2.7% (8), and 5.1% (15), respectively. Two of the gram-negative isolates were resistant to only ciprofloxacin (5.4%, 2 of 37 isolates) and not to other fluoroquinolones. Of 62 ciprofloxacin-resistant, coagulase-negative staphylococci, 32 (51.6%) showed coresistance to levofloxacin. Seven organisms were resistant to all the fluoroquinolones.
CONCLUSIONS: Fluoroquinolones have activity against normal aerobic flora of the ocular surface. Normal ocular flora, especially gram-positive species, has low resistance to the fourth-generation fluoroquinolones, gatifloxacin and moxifloxacin.