

Characterization of conjunctival microflora and antibiotic sensitivity pattern in patients undergoing cataract surgery



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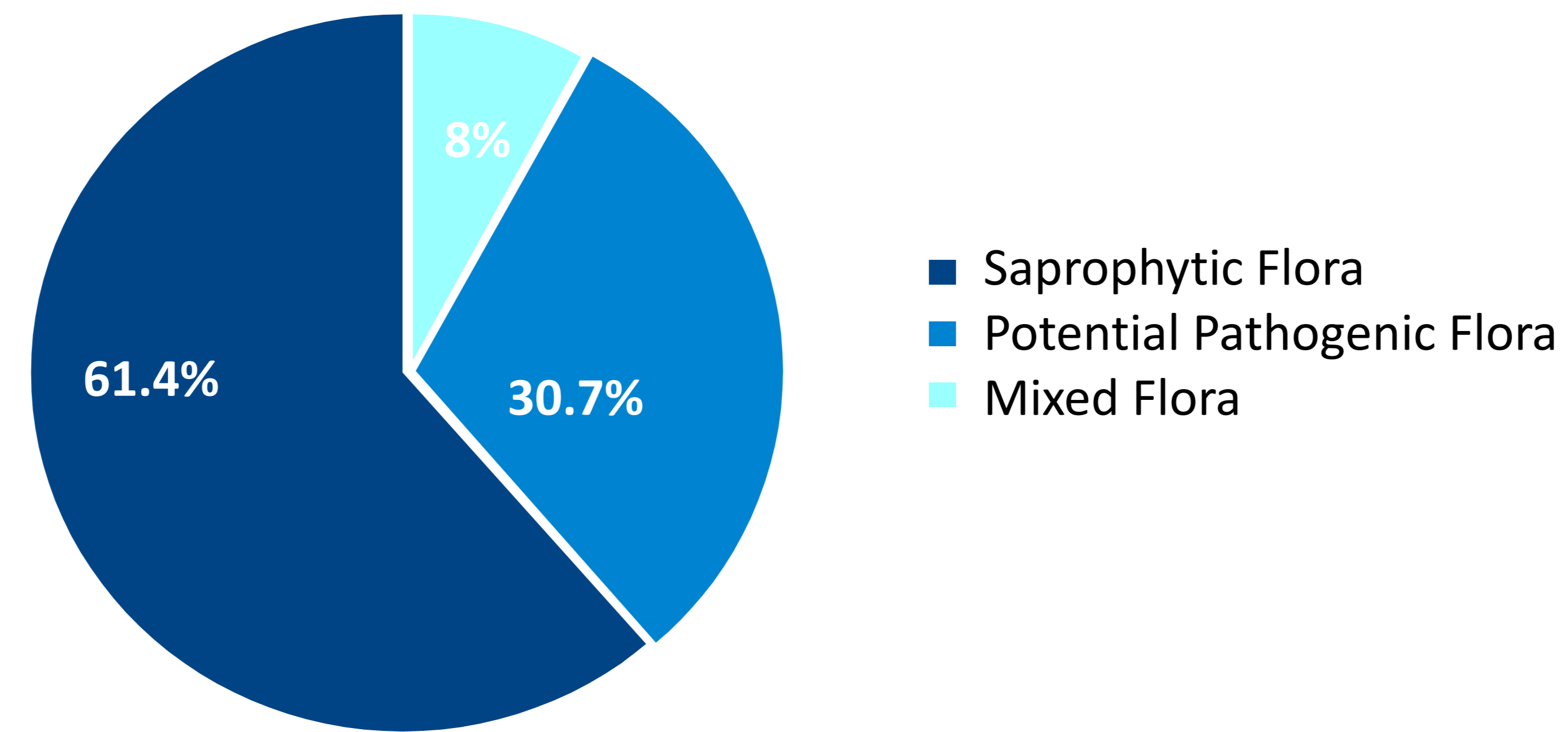


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Purpose: To characterize the conjunctival flora of consecutive patients scheduled for cataract surgery and to determine the susceptibility profile of isolates to several commonly used topical antibiotics.

Methods: Conjunctival swabs were performed in patients scheduled for senile cataract surgery in 2 Italian center, before starting any prophylactic treatment. Swabs were processed for the detection of the microbial growth and for species identification. Selective culture media were used and bacteria were identified by the MicroScan Specialty ID Panels (Beckman Coulter®). Antimicrobial susceptibility for netilmicin, tobramycin, ofloxacin, levofloxacin, moxifloxacin, chloramphenicol, and azithromycin were tested using the Kirby-Bauer disk diffusion method. Susceptibility for oxacillin was useful to identify Methicillin Resistant *Staphylococcus aureus* (MRSA) and *Staphylococcus epidermidis* (MRSE).



Results:

- Moxifloxacin: Gram negative **100%** sensitivity; Gram positive range **83-100%** sensitivity.
- Chloramphenicol: Gram negative **100%** sensitivity, with the exception of *Pseudomonas spp* for its intrinsic resistance; Gram positive range **67-100%**
- Netilmicin: Gram negative 100% sensitivity; Gram positive range 50-100%.
- Levofloxacin: Gram negative range 50-100%; Gram positive range 33-100%

In vitro sensitivity (%)

	OX	NET	TOB	C	OFX	LEV	MXF	CXM	AZM
<i>Moraxella lacunata</i> (1)	1 (100)	1 (100)	0	1 (100)	0	1 (100)	1 (100)	0	0
<i>Morganella morganii</i> (1)	0	1 (100)	1 (100)	1 (100)	0	1 (100)	1 (100)	1 (100)	0
<i>Pseudomonas fluorescens</i> (2)	0	2 (100)	1 (50)	0	1 (50)	1 (50)	2 (100)	0	0
<i>Ralstonia pickettii</i> (1)	0	1 (100)	0	1 (100)	1 (100)	1 (100)	1 (100)	0	0
<i>Serratia marcescens</i> (1)	0	1 (100)	0	1 (100)	1 (100)	1 (100)	1 (100)	0	0
<i>Staph. aureus</i> (13)	12 (92.3)	11 (84.6)	3 (23.1)	9 (69.2)	5 (38.5)	7 (53.8)	12 (92.3)	3 (23.1)	1 (7.7)
<i>Staph. aureus</i> MRSA (7)	0	6 (85.7)	1 (14.3)	6 (85.7)	3 (42.9)	3 (42.9)	6 (85.7)	1 (14.3)	1 (14.3)
<i>Staph. epidermidis</i> (16)	16 (100)	15 (93.8)	10 (62.5)	16 (100)	9 (56.3)	11 (68.8)	16 (100)	9 (56.3)	1 (6.3)
<i>Staph. epidermidis</i> MRSE (6)	0	6 (100)	0	4 (66.6)	1 (16.7)	2 (33.3)	5 (83.3)	2 (33.3)	1 (16.7)
<i>Staph. haemoliticus</i> (4)	4 (100)	3 (75)	1 (25)	4 (100)	2 (50)	3 (75)	4 (100)	3 (75)	3 (75)
<i>Staph. intermedius</i> (14)	11 (78.6)	10 (71.4)	4 (28.6)	12 (85.7)	5 (35.7)	5 (35.7)	12 (85.7)	6 (42.9)	3 (21.4)
<i>Staph. lugdunensis</i> (6)	5 (83.3)	5 (83.3)	4 (66.7)	5 (83.3)	1 (16.7)	3 (50)	6 (100)	1 (16.7)	0
<i>Staph. simulans</i> (3)	2 (66.7)	2 (66.7)	2 (66.7)	2 (66.7)	0	1 (33.3)	3 (100)	0	0
<i>Staph. warneri</i> (2)	1 (50)	1 (50)	1 (50)	2 (100)	0	0	2 (100)	1 (50)	0
<i>Staph. xylosus</i> (8)	8 (100)	6 (75)	3 (42.9)	8 (100)	3 (42.9)	4 (50)	7 (87.5)	2 (25)	0
<i>Stenotroph. maltophilia</i> (2)	0	1 (50)	0	2 (100)	2 (100)	2 (100)	2 (100)	0	0

OX: Oxacillin
NET: Netilmicin
TOB: Tobramycin
C: Chloramphenicol
OFX: Ofloxacin
LEV: Levofloxacin
MXF: Moxifloxacin
CXM: Cefuroxime
AZM: Azitromicin

Results:

Data from 88 eyes of 44 patients (19 males, 25 females, mean±SD age: 75±12 years) were included. Among swabs analyzed, **61.4%** showed only saprophytic flora, **30.7%** showed only potential pathogenic flora and **8.0%** showed both. *S. epidermidis* (20.5%), *S. intermedius* (18.2%) and *S. aureus* (14.8%) were the isolates most frequent; **MRSA** and **MRSE** accounted for **8.0%** and **6.8%** of isolates respectively.

Less frequently (9%), Gram negative bacteria such as *Pseudomonas fluorescent*, *Serratia marcescens*, *Moraxella lacunata*, *Morganella morgani* and *Stenotrophomonas maltophilia* were detected.

Conclusions: A significant percentage of eyes candidates for surgery presented potential pathogenic flora alone or in association with saprophytic organisms. Staphylococci were the most frequently isolated bacteria. All isolated organisms showed an excellent sensitivity to both moxifloxacin and chloramphenicol. Tobramycin and Ofloxacin, widely used in ophthalmology, confirm that they have a profile of reduced sensitivity *in vitro*.