

P2739 Bactericidal activity of 0.6% povidone-iodine eye drops formulation in preparation of patients for cataract surgery: preliminary results of a multi-centre, prospective, clinical study

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Background: Endophthalmitis is one of the most serious complications of cataract surgery. Application of 5% PVP-I before cataract surgery is recommended but dilute povidone-iodine (PVP-I) in humans is not enough investigated. The greater availability of diatomic free iodine in diluted PVP-I solution kills bacteria faster than at more conventional concentrations (5-10%). The objective of this study was to assess the bacterial load variation of the normal conjunctival flora following repetitive applications of PVP-I containing eye drops prior preoperative cataract surgery for endophthalmitis prophylaxis. IODIM™ (Medivis SRL, Italy), was administered as repetitive applications for 3 days in the eye of patients undergoing cataract surgery.

Materials/methods: In this study on medical device lasting 4 days, 120 patients, candidates for cataract extraction, in groups of 20 from 6 centers, were enrolled to assess the effectiveness of 0.6% PVP-I solution in the eye subjected to cataract surgery. Four conjunctival swabs were collected using the Copan ESwab™ collection device, (a tube with 1 ml liquid Amies medium and a FLOQSwab®), from the eyes of each patient in two different time-points. Aliquots of 100 ul of each conjunctival ESwab samples was plate on three different agar plates to assess microbial growth and total bacterial count. Bacterial identification was performed by MALDI-TOF mass spectroscopy and, for some species, antibiotic-resistance related phenotype was performed. The untreated contralateral eye was used as control.

Results: Overall more than 70 different bacterial species were identified from conjunctival ESwab samples with a total bacterial count/eye ranging from 1×10^1 to 8×10^3 UFC/mL with *S. epidermidis* as the most representative specie. More than 85% of patients showed a significant reduction (2-3 log units) in resident microbial load up to the total eradication of bacteria in 46% of patients. The comparison with the untreated eye confirmed the action of IODIM™ in decreasing the load, while the untreated eye showed an extreme variability of bacterial load between the two times.

Conclusions: IODIM™ has been shown to significantly lower the bacterial load of the ocular surface in patients undergoing cataract surgery. ESwab™ demonstrated to optimally collect and transport live cells till 36h after from conjunctival eyes samples.