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Effects of antibiotics and antiseptics on conjunctival bacterial flora in patients undergoing intravitreal injections

Efeitos de antibióticos e anti-sépticos na flora bacteriana conjuntival em pacientes submetidos a injeções intravítreas

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We have read with interest the article by Teberik et al.[1], and we believe that further discussion is required. The authors have analyzed the effects of topical azithromycin 1.5%, moxifloxacin 0.5%, and povidone iodine 5% (PVI) on conjunctival bacterial flora in patients receiving intravitreal injections.

The abstract describes that conjunctival swabs were obtained four times: at the time of admission, 4 days before performing intravitreal injections, and 4 and 8 days after performing the injections. However, the methods section describes that the second and third samples were collected on day 4: before performing the injection and after antisepsis and placing the eyelid speculum. Table 2 presents the prevalence of positive cultures at different time points. When presenting prevalence rates, confidence intervals (at least for negative swabs) should be used, not the absolute percentages only.

Patients in the control group, who did not receive topical antibiotics, exhibited 30.0% positive conjunctival cultures before PVI application and 22.0% after the application. Within the presented investigation, the efficacy of 5% PVI application for 3 min was limited, with other studies revealing a significantly better effect of topical PVI. For example, Nentwich et al. have demonstrated that 85.5%-86.0% of cultures tested positive before PVI application, whereas only 11.7%-16.4% of cultures tested positive after the application of three drops of 1% PVI and subsequent lavage with 10% PVI[2]. Another study has shown that conjunctival lavage using 10% PVI for 3 min decreased the rate of positive swabs from 15.2% (95% confidence interval [CI]: 8.2-26.5%) to 0.0% (95% CI: 8.2-26.5%)[3]. Thus, we would like to know the method of PVI application: was it applied as topical drops or copious irrigation was performed? Prolonged and larger-volume irrigation can reach the conjunctival crypts, especially those located in the fornices, which cannot be achieved with topical drops alone[4].

The disadvantages of repeated topical antibiotic application should not be underestimated. The authors found that a few days after the topical application of azithromycin or moxifloxacin, the rates of positive cultures were 9.8% and 7.3%, respectively; this rate was 26.0% after PVI lavage. It is known that after repeated exposure to PVI, there is no alteration in the conjunctival flora. Moreover, repeated short-term exposure to topical antibiotics through intravitreal injections significantly increases antibiotic resistance of the ocular surface flora[5]. Thus, we believe that antibiotics should not be used interchangeably with antiseptics, and hence, a comparison among these agents is inappropriate.

Finally, the conclusion describes that topical moxifloxacin 0.5% is more effective than 5% PVI in controlling the growth of conjunctival bacterial flora. However, moxifloxacin was not compared to 5% PVI in this study. Therefore, the conclusion should rather state that a combination of periprocedural moxifloxacin 0.5% and antisepsis with 5% PVI results in a greater decrease in positive cultures than the use of 5% PVI alone.

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