

R1 R2 R3 PG0 PG1 Estagiário Tecnólogo
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Ocular toxicity of povidone-iodine eye drops

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Objective: To evaluate the ocular toxicity of povidone iodine eye drops at a concentration of 2,5% and 0,5% and investigate the effects on corneal epithelial wound healing and histopathological alterations. Methods: Each group consisted of 20 rabbits. A central circular corneal epithelial defect of 6,5 mm diameter was created and the povidone iodine eye drops (2,5% and 0,5%, respectively) instilled in the right eye and distilled water in the left eye (control) of each rabbit each hour during 3 days. Biomicroscopical examinations were performed every day, focusing on the corneconjunctival surface and the diameter of the lesion using fluorescein eye drops, photodocumentation, and a computerized image analyzer. After the third day the rabbits were sacrificed and the excised corneas evaluated histopathologically. Statistical evaluation was performed using Friedman, Mann-Whitney and Wilcoxon tests. Results: The povidone iodine eye drops at a concentration of 2,5% caused an increase in the wound healing time ($p < 0,0001$) and conjunctivitis in 100% with mucous secretion in 80%, punctate keratitis in 40%, and discrete stromal edema in 10% of the cases. The histopathological examination showed corneal ulcers and vacuolic degeneration of the endothelial layer in 100%, as well as an inflammatory infiltrate with eosinophils in 80% of the cases. The eyes treated with povidone iodine eye drops at a concentration of 0,5% and the control eyes showed complete epithelial wound healing after 72 hours and histopathologically normal epithelization. Only in one case, a discrete leucocytic infiltrate was observed in the perilimbal area... Conclusion: The ocular toxicity of povidone iodine eye drops is concentration-dependent. The use of the eye drop at a concentration of 2,5% is not adequate for daily and repetitive use. In contrast at a concentration of 0,5% no toxicity was observed.