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Response of connective subcutaneous tissue of mice to antimicrobial photodynamic therapy with different concentrations of a Phenothiazine chloride photosensitizer

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Antimicrobial Photodynamic Therapy (aPDT) has been proposed as a promising technique for disinfection of root canals, especially in teeth with apical periodontitis. However, the biological effect of this treatment and its use with defined parameters still need to be better assessed. The objective of this study was to evaluate the response of the connective subcutaneous tissue of mice after aPDT application using the phenothiazine chloride photosensitizer (10 mg/mL Helbo Blue), in different concentrations and in different periods. Isogenic BALB/c mice (n=99) were divided in four groups according to photosensitizer concentrations of 10 mg/mL, 1 mg/mL, 0.1 mg/mL and 0.005 mg/mL. Each group was divided into three subgroups according to the period evaluated (7, 21 and 63 days). A sample of the subcutaneous tissue of the area of application of the aPDT was collected for histopathological evaluation. The analysis was performed through qualitative parameters (inflammatory infiltrate and fibrosis) and semi-quantitative (scores). The results were analyzed by the non-parametric test of Kruskal Wallis, followed by the Dunn test ($\alpha=5\%$). It was not possible to observe a difference between the groups, independently of the concentration used ($p > 0.05$). It was possible to conclude that the photosensitizer Helbo Blue showed low aggression to subcutaneous tissue of mice in the concentrations and periods evaluated.

Biography

Daniela Silva Barroso de Oliveira is currently a PhD student at the School of Dentistry of Ribeirão Preto and Professor of Pediatric Dentistry at School of Dentistry in the Federal University of Alfnas.

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