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One-session root canal treatment with aPDT: Evaluation in dog's teeth with apical periodontitis

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Aim: To evaluate one-session endodontic treatment with aPDT and two-session treatment with calcium-hydroxide (CH)-based dressing in dog's teeth with apical periodontitis.

Method: After experimental induction of apical periodontitis, 48 teeth were randomly assigned to the following groups: Group I (one-session treatment with aPDT 120 days); Group II (one-session treatment with aPDT 180 days); Group III (two-session treatment with CH-based dressing 120 days) and Group IV (two-session treatment with CH-based dressing 180 days). The animals were euthanized after 120 and 180 days. After histotechnical processing, microscopic and radiographic analyses were performed. Data were analyzed by Kruskal-Wallis and Fisher's exact tests ($\alpha=0.05$).

Result: Groups III and IV presented repaired, resorbed and cemental areas with collagen bundles and few inflammatory cells. In Groups I and II, the areas of cemental resorption were not repaired with reduced presence of cells and fibers. In the analysis of the apical closure, fluorescence microscopy and percentage of radiographic reduction of lesions, there was significant difference between Group I and III and between II and IV ($p<0.05$). Groups I and II had weak RANKL expression and positive immunostaining for RANK and OPG. In III, there was positive immunostaining for RANKL. In IV, the three osteoclastogenesis markers were expressed.

Conclusion: The results using aPDT were worse than those obtained with two-session endodontic treatment using a CH-based dressing in teeth with apical periodontitis.

Biography

Lidia Regina da Costa Hidalgo is a Dentist graduated at University Estadual Paulista, School of Dentistry of Araçatuba, Brazil in 2009. He has completed his Master's degree in Preventive Dentistry and Social Dentistry in 2012 and PhD from Universidade de São Paulo in Pediatric Dentistry, School of Dentistry in Ribeirão Preto, Brazil working on basic research and clinical areas.

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