

Immunoregulatory and inflammatory changes in apical periodontitis

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The aim of the present study was to investigate the immunoregulatory and inflammatory changes in periapical granulomatous tissue and in blood before and after surgical treatment.

The following were investigated: (i) the quantitative composition and topography of T-lymphocyte subsets and macrophages; (ii) the proportion of IgE-producing plasma cells compared with other Ig-producing plasma cells; (iii) the tissue distribution of IgE-producing plasma cells compared with that of mast cells; (iv) the balance between reactive oxidants and antioxidant systems in the inflamed periapical tissue.

In addition, the changes in the serum level of acute phase proteins, IgG, IgA, IgM and complement activity, the lymphocyte subsets, and the neutrophil chemiluminescence in the blood of patients with apical periodontitis requiring apicectomy were investigated.

Our results indicate a decreased ratio of H/S lymphocytes and a different localization of IgE-producing plasma cells compared with mast cells. Minimal changes of the oxidant-antioxidant system in the periapical lesion were noted and a slight disturbance of the host's defence system, which recovered completely after elimination of the local, chronic inflammatory lesion by apicectomy.