

Effect of topical application of melatonin to the gingiva on salivary osteoprotegerin, RANKL and melatonin levels in patients with diabetes and periodontal disease

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20407963&lokasi=lokal>

Abstrak

This cross-section study was designed to assess the effect of topical application of melatonin to the gingiva on salivary RANKL, osteoprotegrin (OPG) and melatonin levels as well as plasma melatonin in 30 patients with diabetes and periodontal disease and in a control group of 30 healthy subjects. Salivary RANKL and OPG were measured by enzyme-linked immunosorbent assay and salivary and plasma melatonin by radioimmunoassay using commercial kits. Periodontograms were performed using the Florida Probe®. Diabetic patients were treated with topical application of melatonin (1 % orabase cream formula) once daily for 20 days. Patients with diabetes showed significantly higher mean levels of salivary RANKL than healthy subjects as well as significantly lower values of salivary OPG and salivary and plasma melatonin. After treatment with melatonin, there was a statistically significant decrease of the gingival index, pocket depth and salivary levels of RANKL, and a significant rise in salivary values of OPG. Changes of salivary OPG levels before and after topical melatonin treatment correlated significantly with changes in the gingival index and pocket depth. Treatment with topical melatonin was associated with an improvement in the gingival index and pocket depth, a reduction in salivary concentrations of RANKL and increase in salivary concentrations of OPG, which indicates that melatonin has a favorable effect in slowing osteoclastogenesis, improving the quality of alveolar bone and preventing the progression of periodontal disease.