The Impact of Mast Cells on Inflammatory Destruction of Perioduntium in Cigarette Smokers

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Abstracts

Background and Aim: Cigarette smoking reduces inflammation and vascular density in gingiva. The mechanism of angiogenesis and its changes in smokers has not been determined, yet. Researches have shown that mast cells are involved in angiogenesis. The aim was to determine the impact of mast cells on the periodontal status in cigarette smokers.

Material and Method: The study was case-control. 30 paraffin embedded block of gingival tissue that involved with periodontitis from 15 cigarette smokers and 15 non-smokers were examined. The number of mast cells was determined in 5 fields at ×400 magnification. The correlation of mast cells count to periodontal and gingival indexes (PI and GI, respectively) were evaluated. The impact of cigarette exposure time was determined using packs× years formula.

Results: The mean number of mast cells count in smokers and non- smokers were 5.53±3.09 and 11.66±5.66, retrospectively. The mean number of mast cells in nonsmokers was significantly higher than smokers (*P* =0).The inflammation intensity of gingivitis and periodontitis in non-smokers were not correlated to mast cells count (GI: 2.58±0.34, p=2.25, PI: 1.75±0.36, p=2.28).In smokers, the severity of gingivitis was not significantly correlated to mast cells count (GI: 1.26±0.40, p=1.21).The intensity of periodontitis was significantly correlated to mast cells count (PI: 2.96±1.09, p=0.003) in smokers. Mast cells count was higher in heavy smokers (*P* = 0.09).

Conclusion: Mast cells contribute to the progression of periodontitis, which is directly related to the density of mast cells. In future studies, it is necessary to examine the immune role of mast cells in terms of their protective and destructive functions in periodontitis. This helps to treat the periodontitis by conducting the mast cells.

Keywords

Cell count, Mast cells, Smoking