

INFLUENCE OF SMOKING ON THE PHAGOCYTTIC ABILITY OF BLOOD AND SALIVARY POLYMORPHONUCLEAR LEUKOCYTES

Abstract

Cigarette smoking is a potential risk factor which has recently been associated with periodontal disease progression. Although the correlation between tobacco use and periodontal disease is quite strong, the role of tobacco in the pathogenesis of periodontal disease is uncertain. The present study included thirty volunteers with clinically healthy gingiva. 15 were smokers, while the other 15 were nonsmokers. Blood and salivary polymorphonuclear leukocytes (PMN) were isolated from both groups. Flow cytometry was applied as a powerful tool to analyze and quantify phagocytosis. Cell viability was determined by trypan blue exclusion. In both blood and saliva the proportion of phagocytic cells was less in smokers when compared to nonsmokers.

Inadequate phagocyte activity could reduce the clearance of pathogens from the oral cavity and thereby facilitate the development of periodontal disease.