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Estimation of phagocytic activity of polymorphonuclear leukocytes in chronic and aggressive periodontitis patients with nitro blue tetrazolium test

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Polymorphonuclear neutrophils (PMN) play an essential role in defending the host against invading microbial pathogens. The primary function of PMN in the innate immune response to contain and kill invading microbial pathogens is achieved through a series of rapid and coordinated responses culminating in phagocytosis and killing of the pathogens. The nitro-blue tetrazolium (NBT) test is rapidly assuming importance as a method of diagnosing bacterial infection and of investigating phagocytic defects. The nitro blue tetrazolium (NBT) test measures the respiratory burst activity in PMN's by the reduction of NBT to formazan by the superoxide anion generated in the burst. It is an indicator of the degree of activity in the enzyme systems which are usually triggered by phagocytosis and which ultimately lead to bacterial killing. However, many recent studies showed lowered phagocytic activity, but to our knowledge no study compared the phagocytic activity among chronic generalized periodontitis, generalized aggressive periodontitis and chronic generalized gingivitis. Therefore, considering the research results, the purpose of this experimental study was to histologically to evaluate the phagocytic activity of neutrophils in subjects with chronic generalized periodontitis, generalized aggressive periodontitis and chronic generalized gingivitis.

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