

# ***3220 Association between IL-1 genotypes and periodontal disease within a well controlled diabetic population***

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Periodontal disease is a recognized complication of diabetes mellitus. Recently, it has become evident that for many common chronic diseases, modifying factors amplify disease mechanisms to make the clinical condition more severe. Data suggest that factors, which amplify the inflammatory process, such as diabetes and genetic influences, increase the relative risk for severity of periodontitis.

**Objectives:** The aim of this report was to investigate the prevalence of periodontal disease in a well-controlled diabetic population, and to establish its association with IL-1 genotypes.

**Methods:** One hundred diabetic patients were randomly screened at the endocrinology clinic of Boston University Medical Center. Periodontal probing measurements were made and type of diabetes, duration of diabetes, level of control (glycosylated hemoglobin) and demographic data were recorded. Periodontal disease was defined as two or more teeth with periodontal pockets of 5 or more mm depth. Finger-stick blood samples were collected and analyzed at the Department of Molecular Genetics and Medicine at the University of Sheffield, United Kingdom, for genotyping of IL-1A (+4845), IL-1B (+3954), IL-1B (-511), and IL-1ra (+2018) polymorphisms.

**Results:** The association between periodontal disease and genotype was determined using Fisher's exact test. Among the diabetic patients in the study, only IL-1B (-511) genotype (1.2 and 2.2 vs 1.1) was found to be associated with periodontal disease in the African-American patients ( $p < 0.05$ ). The frequency of allele 1 was 0.77 in periodontitis affected vs. 0.33 in healthy diabetics. A borderline significant association between IL-1B (+3954) and periodontal disease was also noted in Caribbean periodontal patients ( $p = 0.06$ ); however, the allele 2 frequency in this population was only 10%.

**Conclusions:** These data confirm the high prevalence of periodontitis in the diabetic population. Among diabetic patients, only IL-1B (-511) and IL-1B (+3954) genotypes were found to have a tendency of association with periodontal disease.