

## ***0242 Superoxide production of monocytes in diabetic patients with and without periodontitis***

**Y. DING**, M. KARIMA, A. KANTARCI, H. HASTURK, S. EBNER, and T.E. VAN DYKE, Boston University Goldman School of Dental Medicine, MA, USA, Boston Medical Center, MA, USA

Diabetes mellitus (DM) encompasses a heterogeneous group of disorders with the common characteristics of altered glucose tolerance or impaired lipid and carbohydrate metabolism. There is strong evidence to suggest that the incidence and severity of periodontitis in diabetic patients is influenced by the degree to which DM is controlled by patients. On the other hand, the existence of severe generalized periodontitis as a focal infection may also adversely influence the control of the underlying systemic disease.

**Objective:** The aim of the present study was to evaluate the superoxide production of monocytes of diabetic patients with and without periodontal disease.

**Methods:** Five diabetic patients with periodontitis were evaluated clinically and radiographically and compared to diabetics without any periodontal disease. Five non-diabetic individuals with no sign of periodontitis were used as controls. Superoxide production of monocytes was assessed by a cytochrome C reduction assay.

**Results:** The results revealed that superoxide production in diabetics without periodontal disease was  $2.84 \pm 0.65$  in resting cells and this value increased up to  $7.53 \pm 2.28$  upon stimulation. Resting cells from diabetics with periodontal disease showed  $3.67 \pm 1.75$  MOD while this value increased to  $8.64 \pm 3.09$  in the presence of opsonized zymosan. Superoxide production of monocytes from diabetics with or without periodontal disease had significantly higher superoxide production compared to healthy controls, both in resting ( $1.95 \pm 0.81$ ) and in opsonized zymosan stimulated status ( $4.49 \pm 0.74$ ) ( $p < 0.05$ ).

**Conclusions:** These data suggest that diabetic monocytes constitutively produce more superoxide than control cells. Since elevated superoxide is usually associated with priming or preactivation of cells. These data suggest that a systemic stimulus, perhaps related to elevated glucose, may lead to a hyper inflammatory response in diabetics.

Seq #40 - Leukocytes in Periodontitis

9:00 AM-11:00 AM, Thursday, 7 March 2002 San Diego Convention Center Room 14A (Mezzanine Level)

Back to the Periodontal Research - Pathogenesis Program

Back to the IADR/AADR/CADR 80th General Session (March 6-9, 2002)