

# Over-expression of forkhead box P3 and its association with receptor activator of nuclear factor- $\kappa$ B ligand, interleukin (IL) -17, IL-10 and transforming growth factor- $\beta$ during the progression of chronic periodontitis

Dutzan, Nicolás

Gamonal, Jorge

Silva, Augusto

Sanz, Mariano

Vernal, Rolando

Dutzan N, Gamonal J, Silva A, Sanz M, Vernal R. Over-expression of forkhead box P3 and its association with receptor activator of nuclear factor- $\kappa$ B ligand, interleukin (IL)-17, IL-10 and transforming growth factor- $\beta$  during the progression of chronic periodontitis. *J Clin Periodontol* 2009; 36: 396-403. doi: 10.1111/j.1600-051X.2009.01390.x. Abstract Aim: T regulatory (Treg) cells have been detected in periodontitis lesions, and forkhead box P3 (Foxp3) expression has been negatively correlated to receptor activator of nuclear factor- $\kappa$ B ligand (RANKL). The aim of this study was to correlate T-helper type 1 (Th1), Th2, Th17 and Treg transcription factor expressions, in gingival tissues from patients undergoing active periodontal tissue destruction, with bone loss-associated cytokines. Materials and Methods: In 10 chronic periodontitis patients undergoing disease progression, the mRNA expressions of T-bet, GATA-3, Foxp3, RORC2, interleukin (IL)-1 $\beta$ , IL-10, IL-17, RANKL, interferon (IFN)- $\gamma$