S8_3

Central Arterial Hemodynamic and Components of Periodontitis in a Cross Sectional Population-Based Study

Ari Lieber, Catherine Benguigui, Vanina Bongard, Laurent Bieler, Jean-Bernard Ruidavets, Rémy Burcelin, Bernard Chamontin, Jean Ferrieres, Jacques Amar
Internal Medicine and Hypertension Unit, Rangueil Hospital, INSERM U1027, France

Background:
Periodontitis is a chronic gram negative infection of oral cavity leading to a chronic inflammation and excessive alveolar bone resorption**.** Observational studies suggest that periodontitis has a deleterious effect on cardiovascular health. The mechanism underlying this relation is not fully understood.

Aim:
We sought to explore the relations of components of periodontitis: infection, inflammation and bone resorption to arterial hemodynamic.

Population and Methods:
The study was conducted in Toulouse University Hospital, France, in a sub-sample of the MONALISA Survey (MOnitoringNAtionaLdurISqueArtériel), a cross-sectional study carried out to estimate the prevalence of cardiovascular risk factors in French general population. Subjects underwent an oral exam. 275 subjects agreed to participate. Those with a risk of endocarditis were excluded as well as those with total tooth loss. The present analyses were performed on 255 subjects (140 men (55%); 58 ± 9.5 years).Clinical attachment loss (CAL), bacterial dental plaque (DP), gingival inflammation (GI) and probing pocket depth (PD) were recorded. Periodontitis was defined as the presence of at least one clinical attachment loss≥4mm in each of the four dental sectors. Non-invasive arterial explorations were performed with the PulsePen. Carotid augmentation index and pulse pressure amplification from carotid to brachial artery were specifically observed. $P<0.01$ was considered as statistically significant.

Results:
158 (62%) subjects had a periodontitis. In multivariate regression linear model, after adjustment for age, sex, smoking status, diabetes and LDL cholesterol level, augmentation index was only correlated with CAL (F value 11.3 ; $p=0.0009$). No significant correlation was observed between pulse pressure amplification or augmentation index and DP, GI or PD.

Conclusion:
The current result suggests that the mechanism underlying alveolar bone resorption as assessed by CAL have a relationship with peripheral vascular resistances and microcirculation. This relation should contribute to the association between periodontitis and cardiovascular prognosis.