

HA006 The alcohol harm paradox and tooth loss

Oliveira LM*, Pelissari TR
Estomatologia - UNIVERSIDADE FEDERAL DE SANTA MARIA.

Não há conflito de interesse

Evidence consistently finds that people with lower socioeconomic position are disproportionately or disparately affected by alcohol-related harms compared with advantaged groups, despite reporting similar or even lower average levels of consumption, and this relationship was named alcohol harm paradox (AHP). This study aimed to investigate the occurrence of the AHP associated to tooth loss in adults from a population-based sample. A total of 60,271 non-institutionalized adults (30 years or more) were evaluated using data from the 2019 Brazilian National Health Survey. Alcohol consumption, dichotomized as current heavy drinkers (according to NIAA thresholds) or not, and tooth loss, expressed as both numerical value and lack of functional dentition, were assessed using self-reported data. Covariates included educational attainment and household income. The occurrence of AHP was estimated using the two inferential approaches: effect modification analysis (including income and education as effect modifiers) in negative binomial regression models and marginal structural modeling (including alcohol consumption as a mediator of the effects of income and education on tooth loss). The association between alcohol consumption and tooth loss was stronger among those with lower income and education, but heavy drinking explained little the effect of income and education on tooth loss.

We found the occurrence of AHP related to tooth loss using the effect modification hypothesis. However, alcohol consumption seems to explain little tooth loss inequalities.

(Apoio: CNPq N° 160262/2020-8)

HA007 Pre-clinical behavior of poly(butylene adipate-co-terephthalate) and niobium-containing bioactive glasses barrier membranes

Balbinot GS*, Leitune VCB, Soares RMD, Visioli F, Ponzoni D, Collares FM
Odontologia Conservadora - UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL.

Não há conflito de interesse

Bioactive resorbable barrier membranes with tailored physical and biological properties are a demand to facilitate and enhance guided bone regeneration (GBR) allowing successful implant-supported rehabilitation. In the present study, the pre-clinical behavior of a poly(butylene adipate-co-terephthalate)/niobium-containing bioactive glasses (PBAT/BAGNb) barrier membranes was investigated in a critical-size defect model in rat calvaria. Sixty-three male Wistar rats were submitted to a GBR procedure where membranes were applied in 5mm calvaria defect according to the groups: (1) BAGNb: PBAT/BAGNb membranes; (2) PBAT: PBAT membranes and (3) SHAM: empty defect. A follow-up of 7, 15, and 30 days was established and calvaria tissue was analyzed by x-ray computed microtomography and hematoxylin and eosin histological analysis. BAGNb group presented an enhanced percentage of new bone at 30 days (36.59%) when compared to PBAT (25.46%) and SHAM (25.08%) ($p < 0.05$). A reduction in the trabecular separation and increase in trabecular number were observed for BAGNb at 30 days as well. The formation of new bone in histological sections was increased for BAGNb group, with enhanced tissue maturation over time.

The controlled properties in PBAT/BAGNb membranes promoted an enhanced mineral formation and a more organized trabecular structure in the early stages of bone regeneration, showing a reliable behavior of developed materials for GBR procedures.

(Apoio: Fundo de Incentivo à Pesquisa e Eventos do Hospital de Clínicas FIPE-HCPA N° 2020-0075)

HA008 Transcriptomic and ontological profile triggered by anti-fibronectin aptamers on 3D scaffolds in osteoimmunology

Costa NMM*, Parisi L, Ghezzi B, Martínez CJH, Messoria MR, Oliveira PT, Macaluso GM, Palioto DB

Cirurgia e Periodontia - UNIVERSIDADE DE SÃO PAULO - RIBEIRÃO PRETO.

Não há conflito de interesse

The adsorption of bioactive molecules on three-dimensional scaffolds (SCA) surface possibly optimizes the initial events associated with bone regeneration. Here, the effect of SCA functionalization by anti-fibronectin aptamers (APT) on osteogenesis was verified in in vitro (UMR-106 lineage) and in vivo (calvaria rats defect) investigations. The in vitro assay evidenced more mineralized matrix formation and IBSP labeling in the SCA+APT+OSB group at 10 days. For the in vivo experiment, the analyses were performed in SCA and SCA+APT groups at 5 and 15 days. The Micro-CT revealed greater bone volume and less bone porosity at 5 days in SCA+APT group. Mason's stain and immunofluorescence assay presented more collagen tissue, some bone formation points and high ALP staining in the APT group at 5 days. The transcriptomic investigation demonstrated more differentially expressed genes between SCA and SCA+APT groups at 15 days. At 5 days, the gene ontology (GO) assessment represented differences in cell adhesion and cell membrane ion channels functions (both up-regulated). At 15 days, these differences were associated with immune response, extracellular matrix components, antioxidant activity (up-regulated) and cellular cytoskeleton polymerization (down-regulated). The functions validation was performed by RT-PCR verifying VIM, HPRT1, CLCN4, CD24, KRTAP7-1, PSME2, TNF and IL-1 β gene expression.

These evidences showed that the SCA functionalization with APT provided an improvement in osteoblastic differentiation and in osteoimmunology.

(Apoio: FAPESP N° 2018/12036-3)