cellular proliferation markers in ameloblastomas (AMs) and unicystic ameloblastomas (UAMs).

Findings: Immunohistochemical and western blotting results determine that for both variants, AM and UAM, the Label index (Li) showed a major value for MCM6 protein, followed by MCM5, MCM4 and lastly by Ki67 expression (p value <0.05). The immunoexpression of Ki67 and MCM5 was exclusively nuclear in basal tumoral cells of both variants. On the other hand, MCM4 and 6 were located in the nucleus and cytoplasm of basal and columnar epithelial cells and those that resemble the stellar reticulum. There were no significant differences in the results between the AM and UAM.

Conclusions: Results suggest that MCM5 protein could be a good proliferation marker, with greater sensitivity in comparison with Ki67. Moreover, MCM markers could be used to predict AM and UAM cell proliferation. Further studies with the inclusion of others odontogenic tumors are necessary to confirm the real potential of MCM proteins, more specifically MCM5.

ASSOCIATION OF MAPK/ERK PATHWAY ACTIVATION WITH KRAS MUTATIONS IN ADENOMATOID ODONTOGENIC TUMORS.

PROF. RONELL BOLOGNA-MOLINA[A], DR. TOSHINARI MIKAMI[B], PROF. ADALBERTO MOSQUEDA TAYLOR[C], DR. IKUKO OGAWA[D], PROF. TAKASHI TAKATA[D], PROF. YASUNORI TAKEDA[B].
[A] FACULTAD DE ODONTOLOGÍA, UNIVERSIDAD DE LA REPÚBLICA, [B] IWATE MEDICAL UNIVERSITY, [C] UNIVERSIDAD AUTÓNOMA METROPOLITANA XOCHIMILCO, [D] HIROSHIMA UNIVERSITY

Objectives: Adenomatoid odontogenic tumors (AOT) are benign tumors derived from odontogenic epithelium, and they account for 2-7% of all odontogenic tumors. Intraosseous AOTs are thought to be associated with unerupted permanent teeth, although their pathogenesis is still unclear.KRAS mutation, which is involved in the pathogenesis of some malignant tumors as driver mutation, was recently detected in AOT suggesting its association with tumorigenesis.The aim of this study was to assess the frequency of KRAS mutation and his association with the presence of the MAPK / ERK signaling pathway proteins.

Finding: Paraffin-embedded tissue samples from 9 AOT patients (3-47 years old, mean 24.7 years) were obtained for this study. Genomic DNA was extracted from each sample, and in one case, genetic mutations in 50 cancer-associated genes were examined by next-generation sequencing. A KRAS G12D missense mutation was detected in the DNA sequence of the tumor cells, but it was not detected in that of the stroma tissue. Based on this result, hotspot mutations in the RAS family were analyzed by PCR-rSSO using the remaining 8 cases. KRAS G12V and KRAS G12R mutations were detected in 2 and 4 cases, respectively. Subsequently, in the paraffin blocks, immunohistochemistry was performed to visualize the presence of the proteins involved in the MAPK / ERK signaling pathway. All the cases were EGFR, KRAS,CRAF, BRAF positive, one case was ERK negative, and one case was MEK and ERK negative, all the other remaining cases were MEK and ERK positive.

Conclusions: In conclusion, KRAS mutation was frequently detected in AOT, suggesting its association with tumorigenesis of AOT. However, since EGFR was positive, how the mutation affects the tumor development is still unclear.

CLINICOPATHOLOGICAL SIGNIFICANCE OF EXPRESSION OF MIR-26A, MIR-107, MIR-125B AND MIR-203 IN HEAD AND NECK SQUAMOUS CELL CARCINOMAS.

DR. WILFREDO ALEJANDRO GONZÁLEZ-ARRIAGADA[A], DR. PABLO OLIVERO[A], MRS. BELÉN RODRÍGUEZ[A], DR. CARLO LOZANO-BURGOS[B], DR. CARINE ERVOLINO DE OLIVEIRA[C], DR. RICARDO DELLA COLETTA[D].
[A] UNIVERSIDAD DE VALPARAÍSO, [B] HOSPITAL CARLOS VAN BUREN, [C] UNIVERSIDADE FEDERAL DE ALFENAS, [D] UNIVERSIDADE ESTADUAL DE CAMPINAS

Objectives: MicroRNAs play an important role in the development and progression of head and neck squamous cell carcinomas (HNSCC). In the current study, we compared the expression levels of microRNAs in primary HNSCC with and without cervical lymph node metastasis and determined their clinicopathological significance. The expression levels of miR-26a, miR-107, miR-125b and miR-203 in primary HNSCC with cervical lymph node metastasis (n=16), and their matched lymph node metastasis, and primary tumors without metastasis (n=16) were determined by quantitative RT-PCR. Furthermore, we evaluated the association of those microRNAs with clinicopathological features and survival of patients with HNSCC.

Findings: miR-26a ($p<0.05$) and miR-125b ($p<0.01$) expression levels were significantly higher in primary HNSCC with lymph node metastasis than in tumors without metastasis, while that the levels of miR-203 ($p<0.01$) were significantly lower in the metastatic tumors. Compared with matched metastatic lymph node tissues, miR-125b ($p<0.01$) exhibited a significantly lower expression and miR-203 ($p<0.01$) demonstrated higher expression in the primary tumors. The expression of the microRNAs was associated with various HNSCC clinicopathological risk features, including miR-26a high expression and N stage (p=0.04), poor histological differentiation of tumors (p=0.005) and recurrence (p=0.007), miR-125b high expression and N stage (p=0.0005) and death (p=0.02), and low levels of miR-203 and N stage (p=0.04). Importantly, high expression of miR-26a was significantly associated with shortened disease-free survival (disease relapse) and high miR-125b levels was an independent risk factor for poor disease-specific survival patients with HNSCC.

Conclusion: These findings suggest that miR-26a and miR-125b may be associated with progression and metastasis of HNSCC.

INFLUENCE OF RADIATION DOSE IN COLLAGEN IV AND MMP20 IMMUNOEXPRESSION AND THE TOOTH IMMEDIATE ADHESIVE PROPERTIES.

DR. WILFREDO ALEJANDRO GONZÁLEZ-ARRIAGADA, DR. ISSIS LUQUE-MARTÍNEZ, DR. MIGUEL ÁNGEL MUÑOZ, DR. EDUARDO COUVE. UNIVERSIDAD DE VALPARAÍSO

Objectives: Radiation-related caries is an important collateral effect in patients with head and neck cancer subjected to radiotherapy, with rapidly progressive, asymptomatic and ample lesions, associated to direct and indirect effects of radiation. The present study has the aim of determine the alterations of the immunoexpression of collagen IV and MMP20 in the amelodentin junction and its relationships with odontoblasts according to the radiation dose (0, 20, 40, and 70Gy) and its influence on the