

## DNA METHYLATION PATTERNS ASSOCIATED WITH MALIGNANT TRANSFORMATION OF ORAL LICHEN PLANUS

Sangiovanni A.<sup>1</sup>, Gissi D.B.<sup>1</sup>, Gabusi A.<sup>1</sup>, Rossi R.<sup>1</sup>, Grillini S.<sup>1</sup>, Montebugnoli L.<sup>1</sup>, Foschini M.P.<sup>2</sup>, Morandi L.<sup>3</sup>

<sup>1</sup>Section of Oral Sciences, Department of Biomedical and Neuromotor Science (DIBINEM), University of Bologna, Bologna, Italy

<sup>2</sup>Section of Anatomic Pathology at Bellaria Hospital, Department of Biomedical and Neuromotor Science (DIBINEM), University of Bologna, Bologna, Italy

<sup>3</sup>IRCCS Science Neurological Institute of Bologna, Bologna, Italy

**Aim:** Oral Lichen Planus (OLP) is a chronic inflammatory disease of unknown etiology involving T lymphocytes with cytotoxic activity against the epithelial cells. It belongs to Oral Potential Malignant Disorders (OPMDs) with a transformation rate in Squamous Oral Cell Carcinoma (OSCC) around 1.4%. Purpose of the present study was to analyze methylation levels in a group of 12 OLPs-associated OSCC and in a second group of 25 OLPs that did not develop an OSCC.

**Methods:** two distinct brushing samples from 12 patients with OLPs-associated OSCC were collected: one on the tumor mass (GROUP 1a) and one on the distant mucosa diagnosed as OLP (GROUP 1b). As control group, one sample from 25 consecutive patients with OLP who did not develop OSCC after 60 months of follow-up (GROUP 2) was collected. The DNA

methylation level of 273 CpGs islands of 15 genes previously described as altered in OSCC (*ZAP70*, *KIF1A*, *LRRTM1*, *PARP15*, *FLI1*, *NTM*, *LINC0059*, *EPHX*, *ITGA4*, *miR193*, *GP1BB*, *miR296*, *TERT*, *miR137* and *PAX1*) was investigated by bisulfite Next Generation Sequencing, according to a previously described method.

**Results:** CpGs of *NTM*, *miR296*, *miR137* and *ZAP70* showed similar methylation levels in OSCCs (GROUP 1a) and in their respective OLPs (GROUP 1b), whereas a significantly distinct methylation profile was found in OLP group that did not develop OSCC (GROUP 2).

**Conclusions:** data from this preliminary study identify a specific methylation profile of OLP associated with OSCC. Future investigations will be necessary to evaluate the predictive value of these genes in OLP patients.

## ORAL CANDIDA CHANGES DURING FIXED ORTHODONTIC TREATMENT: A SYSTEMATIC REVIEW

Campobasso A.<sup>1</sup>, Battista G.<sup>1</sup>, Bazzano M.<sup>2</sup>, Di Fede O.<sup>2</sup>, Togni L.<sup>3</sup>, Mascitti M.<sup>3</sup>, Lo Muzio E.<sup>4</sup>

<sup>1</sup>Department of Clinical and Experimental Medicine, University of Foggia, Foggia, Italy

<sup>2</sup>Department of Surgical, Oncological and Oral Sciences (Di.Chir.On.S.), University of Palermo, Palermo, Italy

<sup>3</sup>Department of Clinical Specialistic and Dental Sciences, Marche Polytechnic, Ancona, Italy

<sup>4</sup>Department of Neuroscience and Rehabilitation, University of Ferrara, Ferrara, Italy

**Aim:** to evaluate the changes in oral *Candida* colonization during Fixed Orthodontic Treatment (FOT).

**Methods:** the search for articles was carried out in PubMed, Scopus and Web of Knowledge, including articles published in English until February 2022. The search identified every human study report potentially relevant to the review, applying the search terms “orthodontic” OR “orthodontics” OR “fixed appliance” OR “bracket” AND “Candida” OR “Candidiasis” OR “Candidosis”. After duplicate study selection and data extraction procedures according to the PICOS scheme, the methodological quality of the included papers was assessed by the Swedish Council on Technology As-

essment in Health Care Criteria for Grading Assessed Studies (SBU) method.

**Results:** the initial search identified 533 articles, 152 of which were selected by title and abstract. After full-text reading, eleven articles were selected. The evidence quality for all the studies was moderate.

**Conclusions:** according to the SBU tool, this review could draw conclusions with a limited level of evidence. Contrasting results have been reported on the possible increase in *Candida* counts during FOT. However, FOT promotes the oral *Candida* colonisation of non-*albicans* species, although the most prevalent species is *Candida albicans*.