**Evaluation of cancer stem cell subpopulations in oral squamous cell carcinoma after photodynamic therapy**

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The presence of the cancer stem cells (CSC) in oral squamous cell carcinoma (OSCC) have been previously associated with recurrence, resistance to conventional therapy and poor prognosis. Thus, there is an urgent need to improve the treatment of OSCC, mainly for patients with recurrent or metastatic disease. Photodynamic therapy (PDT) is a minimally invasive therapy able to directly promote cell death, immune surveillance and disrupt tumor vasculature. Thus, this study evaluated the subpopulations of CSC identified with the phenotype CD44high/ESAhigh and CD44high/ESAlow in OSCC cell lines as well as the expression of MICA/B (stressed-induced ligand for Natural Killer cells). Ca1 and Luc4 cell lines were divided in control, LED, 5-aminolevulinic acid (5-ALA, 1mM) and 5-ALA-PDT (5-ALA+LED) groups. Cells were irradiated with a diode emission light (LED) using the BioLambda LedBOX, 660nm, 6J/cm², 49.5 mW/cm². Cells were incubated for 24h and then collected to evaluate the expression of CD44, ESA and MICA/B by flow cytometry. The subpopulation of CSC with the phenotype CD44high/ESAhigh (epithelial morphology) was significantly decreased after PDT when compared to control, LED and 5-ALA groups. However, no difference was observed in the percentage of cells with the phenotype CD44high/ESAlow (mesenchymal morphology) in all groups. MICA/B expression was induced after PDT. In conclusion, PDT was able to decrease the CD44high/ESAhigh cells and to promote the expression of MICA/B, contributing to eradicate the CSC and probably, to the activation of immune cells.

**Biography**

Angela Molon graduated in Dentistry at Nove de Julho University, São Paulo, Brazil in 2017. During her graduation, she worked as a volunteer ate the Research Laboratory, focusing in Molecular and Cellular Biology, Immunology and stem cells. Nowadays, she is a Master’s student at Nove de Julho University in the Postgraduate Program of Biophotonic Applied to Health Science. She is studying the effects of photodynamic therapy and immunotherapy in the treatment of oral squamous cell carcinoma. In her free time, she likes to stay with her family, pets and friends.