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## Evaluation chemotherapeutic in tumor stem cells of head and neck cancer cell lines

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**Statement of the Problem:** Head and neck cancer (HNC) is the sixth most common type of cancer with low survival rate. Despite therapeutic advances, the treatment still show negative outcomes related to chemoresistance and relapses/metastasis. The reasons for this to occur can include the presence of tumor stem cells (TSC) involved in the initiation of malignancy development and tumor metastasis

**Aim:** The purpose of the present study is to evaluate the effectiveness of chemotherapies (Docetaxel, 5-Fluorouracil, Paclitaxel) in head and neck cell lines.

**Methodology & Theoretical Orientation:** Two cell lines of head and neck cancer, HEP-2-laryngeal carcinoma and HN13-oral cavity carcinoma were cultured. After, it has been marked with CD44+ and then separated by fluorescence activated cell sorting (FACS) equipment. This CD44 positive subpopulation was considered as the TSC. TSCs separated were cultivated in 6-well plates. Then, the cells were exposed chemotherapeutic treatment. After 24h the cells viability was determined by trypan blue exclusion. Statistical analyzes were performed to T Student using Bioestat v5.3 Software and were considered significant  $p < 0.05$ . Findings: No statistical difference was shown with or without chemotherapeutic treatment (Docetaxel:  $p = 0.1891$ ; 5-fluorouracil:  $p = 0.2154$ ; Taxol:  $p = 0.2008$ ). The percentage of viable cells after chemotherapeutic treatment compared to control was Docetaxel: 58.36%; 5-fluorouracil: 65.48%; Paclitaxel: 11.55%.

**Conclusion & Significance:** The chemotherapy drugs used in the study do not seem to be effective in the elimination of CD44 positive subpopulation in HNC cell lines. Moreover, paclitaxel treatment induces tumor stem cells death though, it was not observed in statistical analysis. Our findings show that chemotherapeutic drugs do not show effectiveness in CD44 positive subpopulation of HNC. Therefore, it is required development of novel drugs TSC-targeting agents.

### Image

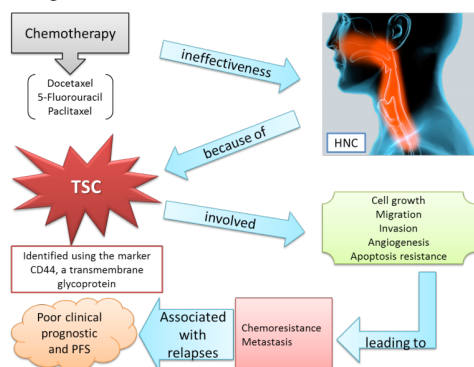


Figure 1: Tumor Stem Cells (TSC) related to poor clinical prognostic and progression free survival (PFS) in Head and Neck Cancer (HNC)

### Biography

Glauca Maria M Fernandes graduated in Biological Sciences from the University Center North Paulista (2009) and a Master's in Health Sciences from the Faculty of Medicine of São José do Rio Preto (2013). Currently, she is pursuing PhD at the Faculty of Medicine of São José do Rio Preto. She has experience in the Genetics and Molecular Biology, with emphasis on genetics and cancer, working on the following topics: Risk factors for colorectal cancer, risk factors for head and neck cancer, molecular biology and biochemistry, cell culture, tumor stem cells and cancer molecular biomarkers.

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