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**“VII SOUTH BRAZILIAN CONGRESS OF ORAL CANCER”
“VI MEETING OF ORAL AND MAXILLOFACIAL SURGERY OF THE ERASTO
GAERTNER HOSPITAL - PR”**

TITLE: *In vitro* study of the composition and microhardness of the hard tissues from oral cavity submitted to gamma irradiation with the dose employed on treatment of patients suffering head and neck cancer

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ORAL PRESENTATION (X) POSTER()

Clinical Radiotherapy is one of the most important techniques for the treatment of malignant lesions of the head and neck, however, exposure to ionizing radiation can lead to systemic complications or sites during and after radiation treatment. Among these immediate local complications in oral cavity, it stands out the xerostomia and consequent oral mucositis. Regarding late complications produced by radiation, decay of radiation and osteoradionecrosis, both dose-dependent lesions, which mostrate a high level of incidence in recent decades (1-30%) and unwieldy, although these are presented after completion of treatment and under the influence of local factors. The methodology proposed in this study aims to examine the direct effect of gamma radiation after irradiation of enamel , root dentin and jawbone samples, using the dose rate used in patients suffering with head and neck cancer. Samples were prepared in advance and standardized and are polished, and then underwent the analysis of the initial surface microhardness of all groups. Subsequently, the samples were irradiated in a dose of Gy rate of two per day, completing a total dose of seventy-two Gy. Finally, the samples were analyzed for Microhardness surface after irradiation, and morphological analysis in scanning electron microscopy (SEM).The data were analyzed statistically with a significance level of 95% ($p < 0.05\%$), through the parametric Student's t-test for related averages, finding a statistically significant result ($p = 0.00$) for the four groups of samples. From the preliminary statistical results, it is concluded that the effect

of gamma radiation on hard tissues of the oral cavity was highly significant with regard to the microhardness of the surface, proving in the morphological analysis on the images obtained by SEM.