TITLE: MICROBIOLOGICAL EVALUATION OF HEAD AND NECK CANCER PATIENTS IN THE PRESENCE OF RADIOTHERAPY-INDUCED ORAL MUCOSITIS**.**

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ABSTRACT:

Radiotherapy (RT) may result in side effects in head and neck cancer' patients, including oral mucositis (OM). This condition is initially characterized by burningsensation and erythema and couldlead to severe pain, increases costs and compromises the patients'treatment.The aim of this studywas to evaluate the oral microbiota of radiotherapy-induced OMof head and neck cancer patients. Seven patients from the Hospital de Câncer de Muriaé, Muriaé-MG,anddiagnosed with head and neck cancer were included. Ethics approval was granted by the Ethics Committees of the Hospital and the Federal University of Minas Gerais.All patients signed the informed consent and were submitted to twosampling: before andon the 20thday of RT. Patients that received palliative radiotherapy (15 daysmedia) were sampled before and on the last day of RT. World Health Organization grading scale was used to investigate OM grade. The first sampling was placed on the mucous membrane and the others,over the OM lesions. It was observed that the study group was composed ofwhite (71.4%), male (85.7%), with an average age of 54(± 1.2) years, ex-smokers (57.2%) and ex-alcoholics (71,4%).The most prevalent anatomical site was the oropharynx (57.1%) and all lesions were diagnosed as epidermoid carcinoma. Cisplatin and fluoro-uracil (42.8% each) were the chemotherapeutic agents most frequently used.Gram-positive bacteria were predominantly isolated (57.1%) in the first collection followed by Gram-negative (28.6%) andin the second, Gram negative (42.8%) prevailed. Fungi were recovered from 28.6% of the patients, in both collections. In the second sampling, Grade III OM lesions prevailed (57.1%).Most patients underwent hospitalization during RT treatment (71.4%) and in 66.7% of them it was possible to recover resistant microorganisms. Whilst partial, the results demonstrated that there was an alteration in the oral microbiota after RT. In the most severe OM cases, *Serratiamarcescens*, *Acinetobacter*ssp, and *Stenotrophomonasmaltophilia* were recovered. OM ulcerative lesions can become a gateway for opportunistic microorganisms so, many of these patients may be exposed to this biological risk. They also pinpointed that hospitalization and isolation of multiresistant microorganismscould be strongly related. Our data, although partial, highlightedto the importance of theknowledge of the microbiota in OM lesions resulting in more assertive treatment and better quality of life for this group of patients.

Keywords: oral microbiota, oral mucositis, head and neck cancer.

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