

Título: ***Candida tropicalis*: BIOFILM INCREASED AFTER RADIOTHERAPY**

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Invasive fungal infections (IFI) have emerged as a public health problem worldwide. Among the main agents, *Candida* species are the most frequently isolated with high mortality rates. Typically, *Candida* spp. is a normal part of the microbiota in many sites of human body. Under certain circumstances, these species can cause infections ranging from superficial to disseminated candidiasis. Patients under treatment with radiotherapy to head and neck cancer became more susceptible to fungal infections, because this therapy induces injury in oral mucosa favoring the infection. Additionally, gamma radiation also seems to act on the yeast causing changes in gene expression and, consequently at physiological characteristics of *Candida* spp, making them possibly more pathogenic. Therefore, the aim of this study was to investigate the influence of radiation on the biofilm formation capacity of *Candida tropicalis*. Yeast isolated from the oral cavity from a patient with head and neck cancer submitted to in *vitro* radiation therapy in order to simulate a procedure used in cancer patients. The yeasts (1×10^5 CFU/mL) were exposed to gamma radiation (quantos ciclos, tempo e etc...). Biofilm: Yeast cells were inoculated into YPD medium broth at 35°C overnight. Two OD₆₀₀ of these cells were inoculated into YPD medium broth in cryotubes and 24-well polystyrene plate at 25°C for 24 and 48 hours. One tube was resuspended in water and sonicated. Another tube was stained with crystal violet (0,4%) for 45 minutes. Each cryotubes was washed 3 times with sterile water, then distained with ethanol (95%), sonicated to release the biofilm and transferred to a 96-well plate to read. The experiment was done in triplicate. The yeast irradiated was able to generate significantly more biofilms as compared with control by CFU assay. However when staining with crystal violet the difference between them was not significant. These results show that irradiation promoted the increase reproduction of yeast, but after 24 hours the biomass is not different significantly. Probably the radiation changes the filamentation capacity of *C. tropicalis* and induces alteration on the colony morphology to smoother. This finding indicates that the yeasts colonizing patients with cancer suffer the effects of radiation and can intensify their actions as infectious agents.

Keywords: *Candida tropicalis*; cancer; radiotherapy; biofilm.

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