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# A PROTECTIVE EFFECT OF MORNING RADIOTHERAPY ON SKIN TOXICITY IN PATIENTS WITH BREAST CANCER

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**Objective:** To evaluate the predictive factors of radiodermatitis, including the time of day in which the patients were treated. **Methodology:** A prospective cohort study conducted with 100 breast cancer (BC) patients evaluated weekly during radiotherapy (RT) and three months after treatment. Survival analysis considering as the end point the occurrence of radiodermatitis grade  $\geq 2$ , according to Radiation Therapy Oncology Group (RTOG) was conducted by univariate and multivariate Cox regression. **Results:** In the multivariate analysis, RT in the afternoon (0-3 pm) (HR= 1.566,  $p=0.042$ ), was significantly associated with the early occurrence of radiodermatitis, when compared with the morning (7-10 am), indicating a potential effect of chronotherapy regarding this adverse event. In the univariate and multivariate analysis, moderate brown skin phototype (HR=1.586,  $p=0.042$ ; HR=1.706,  $p=0.022$ , respectively) and dark or black (HR=4.517,  $p\leq 0.001$ ; HR = 5.336,  $p\leq 0.001$ , respectively) when compared with white or light white was significantly associated with the early occurrence of radiodermatitis. The tangential field separation  $>21$  cm (HR=2.550,  $p=0.009$ , HR=2.923,  $p=0.003$ ), that in women submitted conservative surgery indicates indirectly large breast size, when compared tangential field separation  $<18$  cm was also significantly associated with the early occurrence of radiodermatitis. **Conclusion:** Women with BC, especially when submitted to conventional techniques, common in low-income countries and under development and those with the presence of these risk factors (Dark Brown or black phototypes and tangential field separation  $>21$  cm in women submitted conservative surgery) should be submitted to RT in the morning. It is also suggested the development of researches that test products that can act directly on the pathway of production of melanin, aiming to prevent this adverse event.