

عنوان مقاله:

Radiomics in IOERT of Unilateral Breast Cancer as a Biological Dosimetry

محل انتشار:

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خلاصه مقاله:

Introduction: In this study, Radiomic features analysis of CT scan images of the irradiated breast compared to the contralateral breast after a ۱۲ Gy boost radiation dose in IOERT was conducted to obtain radiation-sensitive indicators (parameters) biological markers or biological dosimeters. **Material and Methods:** ۳۵ contrast chest CT scans (with unilateral ductal carcinoma in situ (DCIS) who had undergone boost IOERT) were used in this study. The total number of ۲۵۹ CT radiomic features (first-order, textural, gradient, and autoregressive model-based features) were extracted using Mazda software. The features that were significantly different in the two breasts were selected. A score was assigned to each of the features and the highest scores were characterized (according to the level of significant differences). The feature selection process was performed using the hybrid feature selection method. **Results:** CT Texture analysis indicated that radiation dose causes significant changes in some radiomic features of the breast tissue. **Conclusion:** With more research in the future, we can fit the Delta-Radiomics values with the received radiation dose and achieve a biological dosimeter to detect low-dose radiation.

کلمات کلیدی:

Radiomics, Breast Cancer, IOERT, CT Scan, Dosimetry

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