Risk Stratification for Cardiotoxicity in Breast Cancer Patients: Predicting Early Decline of LVEF After Treatment

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This study introduces AI-based models in prediction and risk assessment of early cardiac dysfunction in older breast cancer patients, as a side-effect of their cancer treatment. Using only features extracted during the baseline evaluation of each patient the proposed methodology could predict a decline in LVEF values in 4 different follow-up intervals during the first year after treatment initiation (i.e. months 3-12), with a mean accuracy of 66.67% and up to 73.55%. Selected baseline predictive factors were ranked according to their prevalence in the evaluation experiments, replicating the importance of various cardiac disorders at baseline, LVEF value and a higher age, which are all previously reported, while introducing Diabetes as an important risk factor.