Myocardial Changes in Childhood Cancer Patients Treated with Anthracyclines

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Abstract:

Background: Anthracycline-induced cardiotoxicity in survivors of childhood cancer initially presenting as sub-clinical cardiac abnormalities that, if left undetected or untreated, can lead to clinical cardiac dysfunction. The present study aimed to evaluate the early myocardial changes that develop with anthracycline therapy. Material and Methods: In this prospective study the preanthracycline and 6-months postanthracycline echocardiographic and electrocardiographic parameters were analyzed for cardiac dysfunction. The demographic information, including age, sex, type of anthracycline, and cumulative dose, were recorded, as well. Results: In this study, 115 patients with childhood cancer, including 81 males (70.4%) and 34 females (29.6%) with the mean age of 11.1±3.8 years were enrolled. Their normal baseline and 6-months postanthracycline echocardiographic and electrocardiographic parameters were compared for myocardial changes. Doxorubicin alone was used in 91 (79%) patients while daunorubicin alone in 24 (21%). Only 16 children (14%) received a high dose of anthracycline (cumulative dose > 300 mg/m²). QTc interval significantly prolonged 6-months after chemotherapy than the baseline readings.

Keywords: Anthracycline, cardiotoxicity, myocardial changes, childhood cancer, electrocardiography, echocardiography

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