

Original article

Significance of Echocardiography in the Assessment of Left Ventricular Function in Patients Receiving Combined Adjuvant Treatment with Anthracyclines and Trastuzumab

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SUMMARY

The application of anthracycline and trastuzumab in adjuvant breast cancer treatment approach has significantly improved the survival of patients, but also carries the risk of cardiotoxicity that is manifested by reducing the ejection fraction of the heart.

The aim of the study was to investigate the effect of cumulative anthracycline dose in combination therapy with trastuzumab on the left ventricular ejection fraction, and the influence of the time interval for starting the treatment with trastuzumab.

The study included a group of 80 breast cancer patients (aged 28 to 75 years) who underwent the therapy with anthracyclines (IV-VI cycles) with the continuation of trastuzumab therapy for a period of one year. Ejection fraction at the end of completing the treatment period (VI anthracycline cycles and trastuzumab) was significantly lower in 68 (93%) patients compared to the value at the beginning of the study ($68.2\% \pm 6.06$ to $62.1 \pm 6.1\%$; $p < 0.0001$; difference 6.1%). In five patients (anthracyclines and trastuzumab IV cycles) a decrease of 7.1% EF; $p = 0.0043$ was registered compared to the baseline values. The reduction in the ejection fraction was highest in patients in whom the trastuzumab therapy was initiated one month after the last anthracycline therapy (7.33%), and lowest in the subgroup who started receiving the therapy after three months (5.31%).

In patients on cytostatic therapy, echocardiography proves the reduction in the left ventricular ejection fraction, which is cumulative and dose-dependent, and it also proves that the shorter time interval between the last cycle of anthracycline and the initial trastuzumab treatment the more it is associated with a marked decrease in the left ventricular ejection fraction.

Key words: ejection fraction, anthracyclines, trastuzumab

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