

Echocardiographic optimization of cardiac resynchronization therapy device contributes to a greater reduction of heart failure biomarker compared to the electrocardiographic method

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Introduction: Resynchronization therapy is an effective method for treating advanced heart failure that contributes to echocardiographic, clinical and laboratory favorable outcomes.¹⁻⁴ This study was aimed to compare the dynamics in the reduction of heart failure biomarker (NTproBNP) between two groups of patients whose resynchronization device (CRT) was optimized by a) echocardiographic and b) electrocardiographic method.

Patients and Methods: A total of 146 patients with implanted CRT according to the guidelines for resynchronization therapy were included in this randomized study. The examined population was divided into two groups depending on the method used for CRT optimization. In the first group (US) the echocardiographic method was used, correcting the parameters of cardiac mechanical dyssynchrony, and in the second group (ECG) an electrocardiographic method that corrects the parameters of CRT according to QRS width. NTproBNP values were determined before and 6 months after the implantation of CRT and compared with each other.

Results: The results are shown in **Figure 1**. In both groups there was a significant reduction in NTproBNP ($p < 0.001$) over a period of 6 months, but in the US group this decrease was even more significant ($p = 0.037$).

Conclusion: Echocardiographic optimization of CRT leads to a significant decrease in NTproBNP compared to electrocardiographic optimization over a period of six months.

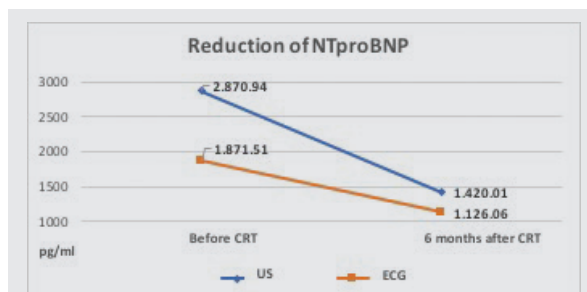


FIGURE 1. Difference in NT-proBNP reduction between the echocardiographic and electrocardiographic optimization groups.

NTproBNP - N-terminal pro B-type natriuretic peptide; CRT = cardiac resynchronization therapy; US = echocardiography group; ECG = electrocardiography group

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LITERATURE

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