



# SERUM N-TERMINAL PRO-B- TYPE BRAIN NATRIURETIC PEPTIDE (NT-PROBNP) LEVELS DETECTION AND CARDIAC INTERVENTRICULAR SEPTUM TISSUE DOPPLER ECHOCARDIOGRAPHIC EVALUATION OF WOMEN WITH POLYCYSTIC OVARY SYNDROME (PCOS).

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## INTRODUCTION:

The NT-proBNP, being a molecule secreted from the ventricle, exists in the circulation for long periods and is an important parameter to assess ventricular functions because it can easily be measured for heart failure. The aim of this study is to evaluate the relationship between serum NT-proBNP levels and left ventricular systolic and diastolic function by tissue doppler echocardiography in women with PCOS.

## MATERIALS AND METHODS:

Thirty two women with PCOS (age: 23.4±4.6 year; body mass index (BMI): 23.8±4.8 kg/m<sup>2</sup>), similar age and BMI have features 30 healthy womens controls involved in the study. Anthropometric features, NT-proBNP levels, HOMA-IR index, renal and hepatic function parameters, serum lipid and cholesterol levels, hormonal tests were measured. Interventricular septum was evaluated by tissue doppler echocardiography.

## RESULTS:

PCOS group had NT-proBNP (p=0.04), total testoteron (p=0.005), cholesterol (p=0.02) and triglycerides (p=0.006) levels higher than control group. Echocardiographic assessment of the interventricular septum thicknes and width of the aortic root measurements levels in the PCOS group higher than the control group. Also, lenf ventricular mitral valve E-wave velocity (p=0.039) in the PCOS group were significantly less than the control group and left ventricular deseleration time (p=0.035) longer than control group. The high NT-proBNP levels was positively correlated with age (r=0.364, p=0.002), interventricular septum thicknes (İVST) (r=0.299, p=0.02) and widht of aortic root (r=0.272, p=0.025).

## DISCUSSION:

Mainly finding of our study is that elevated serum NT-proBNP levels in PCOS group compared to the control subjects thus it can be an early sign of cardiac dysfunction in women with PCOS. Mainly it predisposes to coronary artery disease while causing structural changes in the heart ventricules. For this reason there is a need for new biomarkers that are able to predict cardiac risk in early stages.

According to medical literature our study is the only one that performed by using tissue doppler echocardiography, also results were compared with serum NT-proBNP levels in women with PCOS. But, there are only two reports evaluating the association between PCOS and NT-proBNP levels in medical literature, one conducted in adoloscents and the other in adult women In the study of adult women Çelik et al. found increased levels of NT-proBNP in adult women with PCOS. In another study in adolescents there was no difference between PCOS and control subjects in terms of NT-proBNP levels. Our findings show that high serum NT-proBNP measurements can be beneficial in determining of cardiac dysfunction in early stage in women with PCOS.

## CONCLUSION :

Our study results have shown that, NT-proBNP levels have been found to be a biochemical cardiac early marker of diagnosis subclinical diastolic dysfunction in younger women with PCOS.

## Reference:

Onder Celik, et al. Diagnostic potential of serum N-terminal pro-B-type brain natriuretic peptide levels in the detection of cardiac wall stress in women with polycystic ovary syndrome: a cross-sectional comparative study Human Reproduction Vol.22, No.11 pp. 2992–2998, 2007

