

PREGNANCY HYPERTENSION AND THE DIASTOLIC FUNCTION

Sonila BELE,
Elizana PETRELA,
Luljeta ÇAKËRRI,
Albana BANUSHI,
Majlinda ÇAFKA,
Alma ABAZAJ

Abstract

Introduction: Heart's structural effects of pregnancy hypertension are not thoroughly investigated and yet are waiting to be studied here in Albania in the near future.

The aim of the study: To estimate and value the structural and functional effects in the heart due to pregnancy hypertension.

Methods and results: This study is prospective where the 106 individuals included are pregnant women in the third trimester of pregnancy, complicated by pregnancy hypertension. These patients are divided into three groups with: Chronic Hypertension, Pregnancy-induced Hypertension and Preeclampsia. The indexed measure of the left ventricle (LVMi) has been analyzed as well as its wall relative thickness (PWT). The form of geometric remodeling found more often within the three groups is eccentric hypertrophy and the diastolic dysfunction found within the three groups.

Conclusion: Pregnancy hypertension damages the diastolic functioning of the left ventricle and at the same time it influences its geometric remodeling. By estimating the geometry and diastolic functioning of the left ventricle, echocardiography can identify patients suffering from complications in the 3d trimester of pregnancy.

Key words: pregnancy hypertension, diastolic function, geometric remodeling

Introduction

Hypertension during pregnancy complicates about 2-3% of cases of pregnancy, which is estimated as one of the major causes of disease incidence, fetal and maternal mortality. Various clinical studies have shown that hypertension during pregnancy acts as a risk factor in the short and in the long run causing cardiovascular complications in women (1). Throughout the world preeclampsia and eclampsia are responsible for 14% of

maternal deaths annually (50000-75000); whereas in the U.S.A they are accountable for 15% of premature births and 17.6% of maternal deaths. Only recently there has been an increase in the number of deaths up to 12% of all cases from 5% during 1987-1990; deaths attributed to cardiac problems, mainly to cardio-myopathy (2,3). Lately as a result of a meta-analysis there has been found a link between the increased risk for cardiovascular diseases and the previous pregnancies complicated by preeclampsia. This means there exist 4 times more risks to develop hypertension and 2 times more risks to develop ischemic heart diseases, thrombo-embolism and cerebral insults (4). Other authors find a connection between preeclampsia and chronic hypertension among women later in their lives (RR, 2.00-8.00) as well as disease incidence and cardiovascular mortality (RR, 1.3-3.07) compared with those women who have had a normal intensive pregnancy. Moreover, women who are complicated by preeclampsia before the 36th week of their pregnancy and multiparous women with a history of pregnancy hypertension are more at risk than the rest (RR, 3.4-8.12) (5). The mechanisms related to preeclampsia are complex and with many factors. The common risky factors which connect preeclampsia with cardiovascular diseases are endothelial dysfunction, hypertension, obesity, hyperglycemia, the increased resistance of insulin, and dyslipidemia. Hypertension in preeclampsia happens because of vasospasms, arterial constriction and the reduced intravascular volume compared to normal pregnancies. Blood vessels in normal pregnant women reduce the response towards vaso-active peptides as Angiotensin II and Epinephrine. In contrast, women whose condition becomes complicated due to hypertension have developed an increased sensitivity to these hormones; a change which could be detected before hypertension and other signs of preeclampsia become visible. In patients with preeclampsia and chronic hypertension, a decrease of the arterial elasticity has been found as compared to