

THE COMPLICATIONS OF HYPERTENSION IN PREGNANCY

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Relevance. Hypertension is a widespread global condition but in pregnancy it can lead to an increase in maternal and fetal morbidity and mortality. It has been surmised for long that Hypertension solely affects maternal outcome, but the fact is that it also plays an important role in fetal outcome. This is illustrated by red flags (rising BP, new proteinuria, transaminitis, headaches or visual changes, fetal growth restrictions) and the transition to superimposed preeclampsia. Blood pressure typically declines in early pregnancy, given physiological changes with reduced vascular resistance, reaching the lowest in second trimester, followed by a gradual rise toward baseline in third trimester. During pregnancy, elevated blood pressure is traditionally defined as systolic blood pressure greater than 140mmHg and/or diastolic blood pressure greater than 90mmHg.

There are 4 main classifications of elevated blood pressure during pregnancy, namely:

Chronic Hypertension [BP $\geq$ 140/90 mmHg on 2 occasions $>$ 4h apart; timing- before pregnancy or before 20 weeks gestation],

Gestational hypertension [BP $\geq$ 140/90 mmHg on 2 occasions $>$ 4h apart; timing- after 20 weeks gestation],

Preeclampsia [BP $\geq$ 140/90 mmHg or evidence of end-organ damage] and Preeclampsia with severe features [BP $\geq$ 160 mmHg or evidence of end-organ damage] [1, c. 26; 2 c. 238].

The purpose of this edition is to compile original research and review papers that reveal the significant predicament that hypertension plays on both maternal and fetal outcomes, such as acute kidney injury, stroke, heart failure. While balancing potential fetal risks, such as; growth restriction and preterm birth due to altered uteroplacental perfusion.

Target. To examine the effects of hypertension on both maternal and fetal outcomes, during pregnancy and postpartum.

Research methods. Studying history cases of patients with hypertension (of any of the classifications of hypertension during pregnancy), analysis results, ultrasound examination, statistic methods.

Results and their discussion. Examination of 115 pregnant women (average age of 30.1) resulted in 14.3% prevalence of chronic hypertension and 13.8% prevalence of gestational hypertension. A 17.8% absolute increase was found in the overall prevalence of hypertension from 10.3% to 28.1%. the 2.1% of women who were reclassified with chronic rather than gestational hypertension had the highest risk of developing preeclampsia compared with women without hypertension. The primary maternal end point was the development of preeclampsia or eclampsia, and the primary

fetal/neonatal end point was a composite of preterm birth, small for gestational age and neonatal intensive care admission within 28 days of delivery.

Conclusions. Hypertensive disorders of pregnancy are associated with long term cardiovascular disease in pregnant women. Diagnosis of prevalence of chronic and gestational hypertension, markedly improved the appropriate identification of women who go on to develop preeclampsia, and was associated with the identification of adverse fetal/neonatal risk.

LITERATURE

1. Chronic Hypertension in Pregnancy. ACOG Practice Bulletin No. 203 / American College of Obstetricians and Gynecologists // Obstetrics and Gynecology. – 2019. – Vol. 133, № 1. – P. e26–e50.

2. Gestational Hypertension and Preeclampsia: ACOG Practice Bulletin, Number 222 / American College of Obstetricians and Gynecologists // Obstetrics and Gynecology. – 2020. – Vol. 135, № 6. – P. e237–e260.

HEART FAILURE WITH REDUCED AND MID-RANGE EJECTION FRACTION: CLINICAL AND INSTRUMENTAL DIFFERENCES

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Relevance. Until recently, two main types of HF were distinguished: HF with reduced left ventricular ejection fraction (HFrEF), also known as systolic HF; and HF with preserved ejection fraction, also known as diastolic HF. Since the publication of the European Society of Cardiology Guidelines for the Diagnosis and Treatment of Heart Failure in 2016 [1, c. 2143], a new class of HF has been defined – HF with mid-range ejection fraction (HFmrEF).

Target. To identify clinical and echocardiographic differences in patients with HFrEF and HFmrEF.

Research methods. The retrospective single-center study included 92 patients with HF who were admitted to the Grodno Regional Clinical Cardiological Center for treatment from January 2023 to June 2025. Group 1 included 48 patients with HFrEF (LVEF<40%), while Group 2 included 44 patients with HFmrEF (LVEF 41–49%). Transthoracic echocardiography was performed on Phillips iE33 device with a multi-frequency sensor. Statistical analysis was performed using the STATISTICA 12.0 software.

Results and their discussion. Patients in both groups were comparable in age ($p>0.05$) and gender, with male sex predominant in both groups ($p>0.05$). There were no significant intergroup differences in the prevalence of such comorbidities as hypertension, atrial fibrillation, and diabetes mellitus ($p>0.05$). Patients with HFmrEF