Streszczenie w języku angielskim

Placental dysfunction has serious consequences for both the mother and the fetus. Chronic dysfunction of such an important organ can lead to hypertensive diseases, including preeclampsia, intrauterine fetal growth restriction and pregnancy complications such as premature placental abruption or preterm birth. Preeclampsia affects between 2% and 8% of all pregnancies and is a significant cause of maternal and neonatal morbidity and mortality, especially when it occurs early in pregnancy.

Screening for preeclampsia involves a combination of clinical risk factors, medical history, maternal mean blood pressure (MAP), uterine artery pulsation index (UtA-PI) and maternal angiogenic biomarkers – placental growth factor (PLGF) and plasma pregnancy-associated protein A (PAPP-A).

The study was conducted in 2021-2022 at the Prenatal Testing Clinic of the Department and Clinic of Obstetrics, Gynecology and Gynecological Oncology of the Collegium Medicum Nicolaus Copernicus University in Toruń, at the Dr J. Biziel University Hospital No. 2 in Bydgoszcz.

The results of PE (preeclampsia) screening in 137 patients in the first trimester of pregnancy were analysed, and then, either on the basis of a discharge card or by phone contact, information on the further fate of their pregnancies was obtained by the patients. Each patient underwent a first-trimester ultrasound in accordance with the guidelines of the Fetal Medicine Foundation, including uterine artery flows, blood pressure measurements, and blood samples for biochemical testing.

This study demonstrates the usefulness of each element of screening in the first trimester of pregnancy. An increased risk of PE found during screening in the first trimester of pregnancy not only increases the likelihood of preeclampsia in the course of pregnancy, but also affects the increased frequency of delivery by caesarean section and delivery before 37 weeks of pregnancy. Biochemical markers commonly used in PE screening, such as PAPP-A and PLGF, have been proven to be clinically useful in this study. (The lower the PAPP-A and PLGF values, the higher the risk of PE). Biophysical markers such as mean arterial pressure (MAP) and mean flow through the uterine arteries have also been proven. In addition, the patient's characteristics and history were analyzed. In patients suffering from chronic hypertension,

patients of advanced age (>35 years of age) and with a history of preeclampsia in a previous pregnancy, the risk of preeclampsia estimated in the first trimester of pregnancy increases significantly. However, the usefulness of beta-hCG and ductus venous flow in estimating the risk of preeclampsia has not been demonstrated. Pregnant women with preeclampsia in the course of pregnancy were significantly more likely to give birth before the 37th week of pregnancy, by caesarean section, and more often had to perform an emergency caesarean section.