ABSTRAK

HUBUNGAN SINDROM METABOLIK PADA TRIMESTER PERTAMA DENGAN KEJADIAN HIPERTENSI DALAM KEHAMILAN

Latar Belakang: Sindrom metabolik merupakan kumpulan abnormalitas metabolik yang saling berinteraksi dan berpotensi meningkatkan risiko hipertensi dalam kehamilan (HDK), salah satu penyebab utama morbiditas dan mortalitas maternal. Meskipun peran sindrom metabolik telah banyak diteliti secara global, belum terdapat penelitian di Indonesia yang secara komprehensif mengevaluasi hubungan seluruh komponennya pada trimester pertama terhadap kejadian HDK di Yogyakarta.
Tujuan: Menganalisis hubungan komponen sindrom metabolik trimester pertama kehamilan dengan kejadian hipertensi dalam kehamilan.
Metode: Penelitian kohort prospektif ini melibatkan 463 ibu hamil trimester pertama yang menjalani pemeriksaan antenatal di dua Puskesmas di Yogyakarta. Subjek diikuti hingga usia kehamilan ≥20 minggu dan persalinan. Lima komponen sindrom metabolik diukur berdasarkan kriteria *International Diabetes Federation* (IDF). Analisis dilakukan secara bivariat menggunakan uji *Chi-square* dan multivariat melalui regresi logistik untuk menilai kekuatan hubungan masing-masing komponen.
Hasil: Seluruh komponen sindrom metabolik berhubungan dengan kejadian hipertensi dalam kehamilan ($p < 0{,}001$). Pada analisis multivariat Model 2 yang memuat komponen sindrom metabolik beserta variabel luar (usia, paritas, IMT trimester pertama, riwayat hipertensi sebelumnya, riwayat hipertensi dalam keluarga, riwayat diabetes melitus dalam keluarga, dan aktivitas fisik) tetap signifikan untuk trigliserida, gula darah puasa, HDL rendah, dan tekanan darah trimester pertama; sedangkan lingkar pinggang tidak signifikan ($p = 0{,}121$). Model 2 memberikan kecocokan terbaik (Nagelkerke $R^2 = 0{,}752$), dengan riwayat hipertensi dalam keluarga dan aktivitas fisik sebagai kovariat signifikan.
Kesimpulan: Komponen sindrom metabolik trimester pertama, khususnya trigliserida dan glukosa darah puasa, berhubungan signifikan dengan kejadian HDK.
Kata kunci: Sindrom Metabolik, Hipertensi Dalam Kehamilan, Prediksi Risiko, Trimester Pertama, Trigliserida, Glukosa Darah Puasa, Skrining Antenatal, Faktor Risiko Metabolik

ABSTRACT

ASSOCIATION OF FIRST TRIMESTER METABOLIC SYNDROME WITH HYPERTENSION IN PREGNANCY

Background: Metabolic syndrome is a cluster of interacting metabolic abnormalities that can increase the risk of hypertensive disorders in pregnancy (HDP), a leading cause of maternal morbidity and mortality. While the role of metabolic syndrome has been widely studied globally, no local research has comprehensively evaluated the association of its components in the first trimester for HDP in Yogyakarta.
Objective: To analyze the association of first-trimester metabolic syndrome components with the incidence of hypertensive disorders in pregnancy.
Methods: This prospective cohort study involved 463 pregnant women in their first trimester receiving antenatal care at two public health centers (Puskesmas) in Yogyakarta. Participants were followed through ≥20 weeks of gestation and until delivery. The five components of metabolic syndrome were assessed based on International Diabetes Federation (IDF) criteria. Bivariate analysis using the *Chi-square* test and multivariate analysis using logistic regression were conducted to determine the association strength of each component.
Results: All components of the metabolic syndrome were associated with the occurrence hypertension in pregnancy ($p < 0.001$). In the multivariable analysis (Model 2) which included the metabolic-syndrome components together with external covariates (age, parity, first-trimester body mass index, prior history of hypertension, family history of hypertension, family history of diabetes mellitus, and physical activity) triglycerides, fasting plasma glucose, low HDL cholesterol, and first-trimester blood pressure remained significant, whereas waist circumference was not ($p = 0.121$). Model 2 provided the best fit (Nagelkerke $R^2 = 0.752$), with family history of hypertension and physical activity emerging as significant covariates.
Conclusions: First-trimester components of metabolic syndrome, particularly triglyceride levels and fasting blood glucose, are significantly associated with HDP.
Keywords: Metabolic Syndrome, Hypertensive Disorders in Pregnancy, Risk Prediction, First Trimester, Triglycerides, Fasting Blood Glucose, Antenatal Screening, Metabolic Risk Factors