INTISARI

Perbandingan Ekspresi Protein Bak Sel Trofoblas Pada Preeklamsia Awitan Dini Dan Awitan Lambat

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Latar belakang: Apoptosis di sel trofoblas pada pasien dengan preeklamsia ditemukan lebih tinggi dibandingkan pada pasien dengan kehamilan normal. Salah satu protein dalam sel trofoblas yang berperan penting terjadinya apoptosis pada preeklamsia adalah gen *Bcl-2 family*, meliputi protein proapoptosis dan antiapoptosis. Bak merupakan salah satu anggota protein proapoptosis, melalui aktifasi *caspase* untuk membunuh sel trofoblas melalui jalur intrinsik.
Tujuan: Membandingkan ekspresi protein proapoptosis Bak pada sel trofoblas antara preeklamsia awitan dini dengan lambat.
Metode: Menggunakan metode penelitian potong lintang (*cross sectional study)* untuk membandingkan ekspresi protein Bak dari plasenta preeklamsia awitan dini dengan awitan lambat. Penelitian dilakukan di RSUP Dr. Sardjito, Yogyakarta. Kriteria inklusi adalah pasien preeklamsia dengan usia kehamilan 28-40 minggu dan setuju untuk masuk dalam penelitian. Kriteria eksklusi adalah pasien preeklamsia dengan penyakit penyerta yaitu: hipertensi kronik, diabetes, sistemik lupus eritematosus, gagal ginjal kronik, dan korioamnionitis. Sampel diambil dari plasenta segera setelah bayi lahir, kemudian dikirim ke Laboratorium Histologi FK UGM, Yogyakarta untuk dilakukan pewarnaan imunohistokimia. Ekspresi protein diukur dengan sistem skor imunohistokimia semikuantitatif yaitu HSCORE (*histological score*). Data klinis usia, jumlah paritas, usia kehamilan, indeks massa tubuh dikumpulkan dari rekam medis. Ekspresi protein Bak dibandingkan menggunakan uji t-Independen.
Hasil: Didapatkan sampel penelitian sebanyak 72 plasenta, yaitu 36 plasenta dengan preeklamsia awitan dini dan 36 plasenta awitan lambat. Untuk karakteristik klinis, hanya variabel usia kehamilan yang memiliki perbedaan bermakna secara statistik ($p<0,05$) di antara kedua kelompok preeklamsia, sedangkan untuk variabel usia ibu, paritas, IMT, tekanan darah sistolik dan diastolik tidak terdapat perbedaan yang bermakna secara statistik ($p>0,05$). Didapatkan rerata ekspresi protein Bak lebih tinggi pada kelompok kehamilan dengan preeklamsia awitan lambat dibandingkan dengan awitan dini, namun tidak bermakna secara statistik (rerata HSCORE PE awitan dini vs PE awitan lambat: 2.63 vs 2.85, $p=0.215$, Uji t-Independen). Tidak terdapat korelasi antara karakteristik klinis subjek dengan ekspresi portein Bak ($p >0.05$). Pada uji multivariat ANCOVA**,** baik variabel bebas (PE awitan dini dan PE awitan lanjut) maupun variable luar (umur ibu, paritas, usia kehamilan, dan IMT) tidak memiliki perngaruh yang bermakna terhadap ekspresi protein Bak ($p>0.05$). Nilai *adj*R^2 0.016 menunjukkan kemampuan onset preeklamsia, usia ibu, paritas, usia kehamilan, dan IMT dalam memprediksi Bak adalah sebesar 1,6 %.
Kesimpulan: Ekspresi protein Bak lebih tinggi pada kelompok preeklamsia awitan lambat dibandingkan dengan awitan dini, meskipun tidak bermakna secara statistik.
Kata kunci: BAK, apoptosis, preeklamsia, awitan dini, awitan lanjut

Abstract

The Comparation Of Bak Protein Expression In Trophoblast Cells Between Early And Late Onset Preeclampsia

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Background: Apoptosis in patients with preeclampsia was found to be higher than in patients with normal pregnancies. One of the proteins in trophoblast cells that plays an important role of apoptosis in preeclampsia (PE) is Bcl-2 gene family, which consist of pro-apoptotic and anti-apoptotic proteins. Bak is a member of proapoptotic proteins, through intrinsic pathway by activated executor caspase to program cell death in trophoblast.
Purpose: To compare the expression of Bak pro-apoptotic protein in throphoblast cells between early and late onset preeclampsia.
Methods: The research was conducted at RSUP Dr. Sardjito, Yogyakarta. It was using cross sectional design in order to compare the expressions of Bak protein in placenta from early onset preeclampsia with late onset preeclampsia. The Inclusion criteria were preeclampsia patients with gestational age of 28-40 weeks and agreed to be parcipate in the study. Exclusion criteria were preeclampsia patients with comorbidities, such as chronic hypertension, diabetes, systemic lupus erythematosus, chronic renal failure, and chorioamnionitis. Samples were taken from the placenta immediately after the baby was born, then sent to the Histology Laboratory for immunohistochemical staining. The protein expression was measured using HSCORE/histological score. For clinical data such as maternal age, parity, gestational age, and body mass index were collected from medical record. The expression of Bak protein was compared using Independent T-test.
Results: There were 72 samples had obtained which consist of 36 placentas with early onset preeclampsia and 36 placentas with late onset preeclampsia. For clinical characteristics, only the gestational age variable had a statistically significant difference ($p<0,05$) between the two groups of preeclampsia, while for another variables such as maternal age, parity, BMI, systolic and diastolic blood pressure, there was no statistically significant ($p>0,05$). The mean of Bak protein expression was found to be higher in the late onset preeclampsia group compared to early onset preeclampsia, but not statistically significant (mean HSCORE of PE in early onset vs PE in late onset: 2,63 vs. 2,85, $p=0,215$, Independent t-test). There was no correlation between clinical characteristics of subjects and Bak protein expression (p-values >0,05). In multivariate ANCOVA test, both independent variables (early onset PE and late onset PE) and external variables (maternal age, parity, gestational age, and BMI) had no significant effect on Bak protein expression ($p>0.05$). The *adj*R^2 value was 0,016, indicated the ability of preeclampsia onset, maternal age, parity, gestational age, and BMI to predicting the expression of Bak protein was 1,6%.
Conclusion: There is a slight increase of Bak protein expression in the placenta with late onset preeclampsia group compared to early onset preeclampsia, but there is no statistically significant.
Keyword: BAK, apoptosis, preeclampsia, early onset, late onset