Pengaruh polimorfisme gen apolipoprotein e terhadap kejadian nefropati diabetik penyandang DM tipe 2 di Palembang = The effect of apolipoprotein e gene polymorphism to diabetic nephropathy incidence with T2DM in Palembang

Komariatun, author

Abstrak

ABSTRAK
Latar Belakang: Nefropati diabetik (ND) merupakan komplikasi mikrovaskular yang berkontribusi terhadap end stage renal disease (ESRD) pada penyandang DMT2. Polimorfisme gen apolipoprotein E (APOE) dihubungkan dengan dislipidemia merupakan faktor risiko untuk timbulnya ND.

Tujuan: Mengetahui pengaruh polimorfisme gen APOE terhadap kejadian ND penyandang DMT2 di Palembang dan menganalisis pengaruh polimorfisme gen APOE terhadap perubahan profil lipid penyandang DMT2 dengan ND.

Metode: Penelitian kasus kontrol pada penyandang DMT2 di Palembang. Kelompok kasus adalah penyandang DMT2 dengan ND dan kelompok kontrol adalah penyandang DMT2 tanpa ND yang memenuhi kriteria penyertaan.

Hasil: Terdapat 37 penyandang DMT2 dengan ND (ACR > 300 mg/g kreatinin) dan 42 tanpa ND (ACR < 30 mg/g kreatinin). Tidak terdapat perbedaan bermakna pada usia, jenis kelamin, lama DM, tinggi badan, tekanan darah sistolik, glukosa darah puasa, HbA1c dan profil lipid. Terdapat perbedaan bermakna pada berat badan, IMT, TD diastolik, hemoglobin, ureum, kreatinin dan eGFR antara kasus dan kontrol. Distribusi genotip tidak berbeda bermakna. Pada kelompok kasus didapatkan peningkatan frekuensi alel gen APOE ε2 dibanding kontrol (62,2 % vs. 37,8 %). Dengan analisis bivariat didapatkan penyandang DMT2 yang mengandung alel gen APOE ε2 2,5 kali lipat dan bermakna (p = 0,023) dibandingkan gen APOE ε3 dalam menyebabkan ND sedangkan alel ε4 0,65 kali lipat dan tidak bermakna (p = 0,37). Profil lipid tidak berbeda bermakna baik pada penyandang DMT2 dengan ND maupun penyandang DMT2 tanpa nefropati.

Simpulan: Frekuensi alel gen APOE ε2 lebih tinggi pada penyandang DMT2 dengan ND dibandingkan tanpa ND. Gen APOE ε2 merupakan faktor risiko kejadian ND pada penyandang DMT2. Tidak ada hubungan antara kejadian ND dengan perubahan profil lipid.
<hr><i>ABSTRACT
Backgrounds. Diabetic nephropathy is microvascular complication, largely contributed to end stage renal disease in T2DM patients. Apolipoprotein E (APOE) genetic polymorphism in association with dyslipidemia have been proposed as one of the risk factors for the development of diabetic nephropathy (DN).

Aim: To examine the effect of apolipoprotein E (APOE) gene polymorphism to DN incidence in patients with T2DM and to analyze the effect of APOE gene polymorphism to lipid profile in DN.

Method. Case control study at Palembang. Case group were T2DM with nephropathy and control group were T2DM without nephropathy.

Results. There were 37 patients with DN (ACR > 300 mg/g creatinine) and 42 patients without nephropathy (ACR < 30 mg/g creatinine). No significant differences in terms of age, sex, duration of DM, height, systolic blood pressure, fasting glucose, HbA1c and lipid profiles between the two groups. There were significant differences in weight, BMI, diastolic blood pressure, hemoglobine, ureum, creatinine and eGFR with p value 0.028, 0.013, 0.017, < 0.001, < 0.001, < 0.003 and < 0.002 respectively. The distribution of APOE genotypes between the two groups are the same. However, there was a significant difference in the allele frequencies, ε2 frequency was significantly higher in case group compared to control group (62.2 % vs. 37.8 %). On bivariate analysis ε2 allele showed 2.50 times to DN risk with p 0.023 while ε4 allele 0.65 times to DN risk. No significant difference in lipid profiles between DN and without nephropathy.

Conclusions. APOE ε2 allele was significantly higher in macroalbuminuria group. These result suggest that ε2 allele may be associated with the development of DN and ε2 allele was risk factor in T2DM patients. There were no correlation between APOE gene polymorphism and lipid profiles.</i>