DISERTASI

PENGARUH PENGENDALIAN HIPERGLIKEMIA AKUT POSTPRANDIAL DENGAN ACARBOSE TERHADAP FAKTOR RISIKO ATEROGENESIS PADA DIABETES MELITUS TIPE 2

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ABSTRAK

PENGARUH PENGENDALIAN HIPERGLIKEMIA AKUT POSTPRANDIAL DENGAN ACARBOSE TERHADAP FAKTOR RISIKO ATEROGENESIS PADA DIABETES MELITUS TIPE 2

Jazil Karimi

Latarbelakang: Diabetes melitus meningkatkan risiko terjadi PJK 2-3 kali,akan tetapi pengendalian KGD intensif untuk mencapai kadar Hb A1c mendekati normal, terbukti gagal mencegah kejadian kardiovaskuler sebab HbA1c tidak menggambarkan variabelitas glukosa disebabkan fluktuasi akut KGD setiap makan atau hiperglikemia akut posprandial(HAP) yang berkontribusi besar menimbulkan stres oksidatif. Penelitian ini bertujuan untuk membuktikan pengendalian HAP dapat menurunkan faktor risiko aterogenesis dan progresivitasDMT2.

Metoda: Penelitian eksperimental dengan desain *pretest-posttest control group*, membandingkan efek pengendalian HAP dengan acarbose terhadap penurunan KGD 30 menit setelah makan pada populasi DMT2 di Poli Endokrinologi RSArifin Achmat Pekanbaru, pada Juni 2015- Maret 2016.Diukur variabel dependen: kadar insulin, PARP, nitrotirosin, PAI-1 dan ICAM, sebelum dan sesudah perlakuan selama 24 minggu. Upaya mengurangi faktor perancu dilakukan dengan kriteria inklusi-eksklusi, edukasi homogenitas diit harian dan mengintensifkan aktivitas harian dan olahraga teratur.

Hasil: Sebanyak 340 pasien DMT2, 78 (22.9%) diantaranya memenuhi kriteria sebagai subyek penelitian, kemudian dibagi secara random, ternyata 70 subyek dapat menyelesaikan sampai akhir penelitian (35 subyek perlakuan vs 35 subyek kontrol), sedangkan 8 subyek(10.3%) dikeluarkan karena tidak patuh datang berobat setiap bulan. Didapatkan penurunan bermakna delta KGD 30 menit setelah makan (p=0.003) akibat pengendalian HAP, sejalan laporan efek acarbose menurunkan KGD postprandial dan KGD 1 jam postprandial sebesar 42 mg/dl (Hanefeld et al, 2004). Terbukti pengendalian HAP dapat pula menurunkan secara tidak bermakana beberapa factor risiko aterogenesis yaitu penurunan kebutuhan sekresi insulin fase-1 (p=0.94), kadar PARP (p=0.73), Nitrotirosin (p=0.18), PAI-1 (p=0.71) dan ICAM-1 (p=0.36) dibandingkan kelompok kontrol.

Kesimpulan: Diperlukan waktu penelitian lebih lama untuk mendapatkan hasil berbeda secara bermakna, dan efek pengendalian HAP dengan acarbose terhadap penurunan faktor-faktor risiko aterogenesis secara tidak bermakna, membuka peluang bagi para klinisi untuk mempertimbangkan memilih obat yang berefek mengendalikan HAP guna mencegah komplikasi kardiovaskuler dan progresivitas DMT2 pada pasien DMT2.

Kata kunci: HAP, Stres oksidatif, Aterogenesis,Komplikasi KV, acarbose.

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ABSTRACT

EFFECT OF ACUTE POSTPRANDIAL HYPERGLYCEMIA CONTROL WITH ACARBOSE ON THE ATHEROGENESIS RISK FACTORS IN TYPE 2 DIABETES

Jazil Karimi

Backgrounds: Diabetes mellitus increases the incidence of coronary heart disease up to 2-3 folds. That intensive control of blood glucose to achieve normal HbA1c has failed to prevent cardiovascular events because HbA1c didn't depict glucose variability caused by fluctuations of acute postprandial hyperglycemia (APH) which has major contributions on oxidative stress. This study aims to confirm that the impact of APH controls could decrease of atherogenesis risk factors and progression of type 2 diabetes mellitus.

Methods : The experimental study was designed with pretest-posttest control group comparing the effect of acute postprandial hyperglycemia controls with acarbose on decreasing blood glucose level 30 minutes after meal in Type 2 DM outpatients of Endocrinology Clinic Arifin Achmad General Hospital Pekanbaru at June 2015 until Maret 2016. Dependent variable was measured, including insulin level, PARP, nitrothyrosine, PAI-1 and ICAM prior and after the treatment of 24 weeks. Bias factors was suppressed with inclusion-exclusion criterias, education of daily diet homogeneity and intensivity of daily activities and routine exercises.

Results: All of 340 patients ,78 (22.9%) subjects fulfilled the criterias then randomly assigned to groups and 70 subjects participated until the end of study (35 subjects in treatment group vs 35 subjects in control group) while 8 subjects (10,3%) was dropped due to lack compliance. This study finds significant decreased of delta blood glucose level 30 minutes after meal (p=0.003) due to APH control, in line with the clinical study which reported the effect of acarbose in the reduction postprandial and decreased of 42 mg/dl of blood gluose level 1 hour after meal (Hanefeld et al, 2004). Controls of APH insignificantly decreased of several atherogenesis risk factors such as phase-1 insulin secretion demands (p=0.94), PARP level (p=0.73), nitrothyrosin (p=0.18), PAI-1 (p=0.71) and ICAM-1 (p=0.36) level.

Conclutions: The longer research was needed to achieve significant difference. On the other hand APH control is crucial to reduce atherogenesis risk factors and the clinician needs to consider the potential effect of the drug on APH control of type 2 DM.

Keywords: APH, oxydative stress, atherogenesis, cardiovascular complication, acarbose

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