

## Profil kadar asam urat serum dan hubungannya dengan resistensi insulin pada anak kandung penyandang DM tipe 2 = Serum uric acid profile and correlation with insulin resistance in the first-degree relatives of patients with type 2 diabetes mellitus

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### Abstrak

Latar belakang. Studi sebelumnya menunjukkan bahwa hiperurisemia mengambil bagian dalam berkontribusi dalam berkontribusi pada proses sindrom metabolik dua arah. Hiperurisemia merupakan kelainan metabolisme asam urat yang menghasilkan kondisi SUA yang berlebihan dalam plasma darah sebagai akibat dari degradasi metabolisme purin. Namun, masih ada penelitian SUA dan sindrom metabolik yang langka pada subjek dewasa muda dan tidak ada penelitian yang pernah dilakukan pada FDR dewasa muda dari subjek T2DM sejauh ini secara lokal dan internasional. Untuk mengetahui perbedaan kadar asam urat serum (SUA) antara derajat-kerabat pertama (FDR) diabetes melitus tipe 2 (T2DM) dan non-FDR T2DM, serta korelasinya dengan resistensi insulin pada FDR T2DM.

Metode. Sebanyak 126 (62 FDR dan 64 non-FDR, berusia 25-39 tahun) mata pelajaran terdaftar. Indeks massa tubuh, lingkar pinggang, tekanan darah, glukosa plasma puasa, profil lipid dan kadar SUA diukur. Subjek dengan gangguan toleransi glukosa dan hipertensi tidak termasuk. Hiperurisemia didefinisikan oleh American College of Rheumatology ( 7,0 mg/dL untuk pria dan 6,5 mg/dL untuk wanita), resistensi insulin didefinisikan oleh Homeostatic Model Assessment for Insulin Resistance (HOMA-IR). Sebanyak 126 subjek yang memenuhi kriteria inklusi. Kami tidak menemukan perbedaan yang signifikan dalam karakteristik dasar kelompok FDR dan non FDR dari kelompok T2DM. Tingkat SUA tidak berbeda antara FDR dan non-FDR T2DM (5,75 1,41 mg/dL dan 5,54 1,80 mg/dL,  $p = 0,287$ ). Tidak ada korelasi antara SUA dan resistensi insulin pada FDR T2DM ( $r = 0,208$ ,  $p = 0,105$ ).

Kesimpulan. Tingkat SUA dalam normoglikemia dan normotensi FDR T2DM tidak berbeda dibandingkan dengan non-FDR T2DM. Tidak ada korelasi antara SUA dan resistensi insulin pada orang dewasa muda yang sehat dari FDR T2DM.

.....Background. Previous studies showed that hyperuricemia takes part in contributing the process of metabolic syndrome bidirectionally. Hyperuricemia is an abnormality of uric acid metabolism which produce a condition of excessive SUA in blood plasma as a result of degradation from purine metabolism. However, there is still scarce research of SUA and metabolic syndrome on young adult subjects and no study has ever done in young adult FDR of T2DM subjects so far locally and internationally. To determine difference of serum uric acid (SUA) level between first degree-relatives (FDR) of type 2 diabetes mellitus (T2DM) and non-FDR of T2DM, and its correlation with insulin resistance in FDR of T2DM.

Methods. A total of 126 (62 FDR and 64 non-FDR, aged 25-39 years) subjects were enrolled. Body mass index, waist circumference, blood pressure, fasting plasma glucose, lipid profile and SUA levels were measured. Subjects with impaired glucose tolerance and hypertension were excluded. Hyperuricemia was defined by American College of Rheumatology ( 7.0 mg/dL for males and 6.5 mg/dL for females), insulin resistance was defined by Homeostatic Model Assessment for Insulin Resistance (HOMA-IR).

Results. There were 126 subject met inclusion criteria. We discovered no significant differences in basic

characteristics of both FDR and non FDR of T2DM groups. SUA level was not different between FDR and non-FDR of T2DM ( $5.75 \pm 1.41$  mg/dL and  $5.54 \pm 1.80$  mg/dL,  $p = 0.287$ ). There was no correlation between SUA and insulin resistance in FDR of T2DM ( $r = 0.208$ ,  $p = 0.105$ ).

Conclusions. SUA level in normoglycemia and normotensive FDR of T2DM was not different compared to non-FDR of T2DM. There was no correlation between SUA and insulin resistance in healthy young adults of FDR of T2DM.