Kadar 11-Dehidro Tromboksan B2 urin pasien Diabetes Mellitus tipe 2 serta hubungannya dengan HbAlc di Rumah Sakit Cipto Mangunkusumo = Urinary 11-Dehydro Thromboxane level type 2 Diabetes Mellitus patient and the correlation with HbA1c at Cipto Mangunkusumo Hospital / N. Yune Yohana

N. Yune Yohana, auhtor

Abstrak

ABSTRAK
Latar belakang : Penyakit jantung koroner (PJK) dan stroke merupakan penyebab kematian utama baik di negara Barat maupun di Indonesia terutama di daerah perkotaan. Setiap tahun lebih banyak orang meninggal karena penyakit kardiovaskular dibandingkan penyakit lain. Diabetes melitus merupakan faktor risiko independen untuk penyakit kardiovaskular. Gangguan aliran darah yang mengakibatkan PJK maupun stroke disebabkan oleh trombosis arteri. Aktivasi trombosit diduga terjadi pada pasien diabetes melitus. Ketika trombosit teraktivasi akanterjadi beberapa perubahan diantaranya pelepasan kandungan granula dan pembentukan tromboksan A2. Pengukuran tromboksan A2 sulit dilakukan karena sifatnya yang tidak stabil, maka dilakukan pengukuran terhadap metabolitnya 11-dehidro tromboksan B2. tujuan penelitian ini adalah menukur kadar 11 dehidro TxB2 di urin pada pasien diabetes melitus sebagai suatu petanda dini aktivasi trombosit dan mengkorelasikannya dengan hemoglobin A1c (HbA1c).

Metoda : Empat puluh lima pasien diabetes melitus tipe 2 dan 30 non diabetes sebagai kontrol diambil pada penelitian ini. Pengukuran kadar 11 dehidro TxB2 di urin dengan tehnik competitive EIA menggunakan reagen dari Cayman Chemical. Kadar 11-dehidro tromboksan B2 urin disajikan dalam bentuk rasio dengan kreatinin urin. Pengukuran HbA1c dilakukan dengan metode akfinitas boronik menggunakan NycocardR.

Hasil : Pada kelompok diabetes melitus median kadar 11 dehidro TxB2 di urin 1216,56 pg/mg kreatinin (70,53 – 12167,72 pg/mg kreatinin). Terdapat perbedaan bermakna dibanding kelompok non diabetes dengan median 200,55pg/mg kreatinin (57,19-602,46 pg/mg kreatinin). Terdapat korelasi yang kuat antara kadar 11 dehidro TxB2 pada kelompok diabetik dengan indeks glikemik (HbA1c).

Kesimpulan : 11 dehidro TxB2 di urin dapat dipakai sebagai petanda dini aktivasi trombosit pada pasien diabetes melitus dan mempunyai korelasi yang kuat dengan HbA1c.
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ABSTRACT
Background: It is widely known that heart disease and stroke are the main cause of death in Western countries. This issue found in Indosesia especially in the urbam ares. Diabetes mellitus is one of the independentbrisk faktor for cardiovaskular. Cirulatory disorder that result in coronary heart disease and stroke is arterial thrombosis. Platelet play an important role in the pathogenesis of arterial thrombosis. Some report stated that platelet activation occurred in diabetes mellitus. When platelet are activated, some change happened, i.e : released of granule content and thromboxane A2 (TxA2) formation. Measurement of TxA2 as a marker for platelet activation was hampered by the instability of this substance. Therefore it is preferred to measure their stable metabolite 11-dehydro thromboxane B2 in urine. The aim of this study is to measure urine 11-dehydro thromboxane B2 in diabetes mellitus as an early of platelet activation and to correlate this value with hemoglobin A1c.

Methode: Forty five patients with type 2 diabetes mellitus and 30 non diabetic as control group were enrolled in this study. Measurement of urine 11 dehidro TxB2 was done by competitive EIA using reagent from Cayman Chemical. The level of urine 11-dehydro TxB2 was expressed as ratio with urine creatinine. Measurement of HbA1c was performed by boronic affinity method using NycocardR.

Result : In diabetics group the median rate for urine 11 dehydro TxB2 was 1216,56 pg/mg creatinine (70,53 - 12167,72 pg/mg creatinine). It was significantly higher than that of non diabetic group, which median was 200,55 pg/mg creatinine (57,19 - 602,46 pg/ mg creatinine). the level of urine 11-dehydro TxB2 in diabetics group showed a strong correlation with HbA1c as glycemic index.

Conclusion: Urine 11-dehydro TxB2 can be used as an early marker of platelet activation in diabetes mellitus patients and there was a strong correlation with HbA1c.