

Profil vitamin D remaja diabetes melitus tipe 1 dan hubungan kadar vitamin D dengan retinopati dan nefropati diabetik = Vitamin D profile in adolescence with type 1 diabetes mellitus and its association with retinopathy and nephropathy diabetic

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Abstrak

ABSTRAK

Latar belakang: Vitamin D dianggap berperan dalam patogenesis diabetes melitus tipe 1 (DMT1), memperbaiki kontrol metabolik dan menurunkan risiko terjadinya komplikasi mikrovaskuler.

Tujuan: Mengetahui profil kadar vitamin D remaja DMT1 dan hubungan kadar vitamin D dengan retinopati dan nefropati diabetik.

Metode: Penelitian potong lintang pada remaja DMT1 usia 11-21 tahun dengan lama sakit minimal satu tahun. Semua subjek dilakukan wawancara menggunakan kuesioner, pemeriksaan fisis lengkap, kadar 25(OH)D, HbA1c, rasio albumin/kreatinin urin, dan fotografi fundus.

Hasil: Terdapat 49 subjek, 34 (69,4%) perempuan dan 15 (30,6%) lelaki dengan median lama sakit lima tahun (1-16 tahun). Sebanyak 96% subjek menggunakan insulin basal bolus. Median HbA1c adalah 9,5% (6,3% - 18%). Tidak ada subjek dengan kadar 25(OH)D $\leq 30\text{ ng/mL}$, 6 subjek (12,2%) dengan kadar 25(OH)D 21-19 ng/mL dan 87,8% memiliki kadar 25(OH)D $\geq 20\text{ ng/mL}$. Rerata kadar 25(OH)D adalah 12,6 ng/mL (SD $\pm 5,4\text{ ng/mL}</math>). Faktor yang berhubungan dengan kadar vitamin D adalah lama paparan matahari (RP 13,3; 95%IK = 1,8-96, p= 0,019). Jenis pakaian, penggunaan sunblock, IMT, lama sakit, konsumsi susu tidak berhubungan dengan kadar vitamin D. Prevalens retinopati pada penelitian ini adalah 8,2%, mikroalbuminuria 28,5%, dan nefropati 16,3%. Tidak terdapat hubungan bermakna antara kadar vitamin D dengan retinopati, mikroalbuminuria, dan nefropati diabetik.$

Kesimpulan: Tidak ada remaja DMT1 dengan kadar vitamin D yang cukup dan tidak ada hubungan antara kadar vitamin D dengan retinopati, mikroalbuminuria, dan nefropati diabetik.;Background: Many studies showed that vitamin D involved in the pathogenesis of type 1 diabetes mellitus (T1DM), metabolic control and decreased the risk of microvascular complication.

ABSTRACT

Objective: To find out the vitamin D profile in adolescence with T1DM and its association with retinopathy and nephropathy diabetic.

Methods: This was a cross sectional study performed during April to May 2015 involving T1DM adolescence aged 11-21 years old with duration of illness ≥ 1 year. We used questionnaire to know factors associated with vitamin D level. We performed physical examinations, tests for level of 25(OH)D serum, HbA1c, urine albumin/creatinine ratio and fundal photographic.

Results: There were 49 subjects, 34 female (69.4%) and 15 male (30.6%) with median duration of illness was five years (1-16 years). Most of the subjects (96%) were on basal bolus regimen. Median of HbA1c level was 9.5% (range 6.3%-18%). None of the subject had 25(OH)D level \leq 30 ng/mL, 12.2% with 25(OH)D level of 21-19 ng/mL and 87.8% was \leq 20 ng/mL. Mean of 25(OH)D level was 12.6 ng/mL (SD \pm 5.4 ng/mL). Duration of sun exposure was associated with 25(OH)D level (prevalent ratio of 13.3; 95%CI = 1.8-96, p= 0.019); While type of clothing, sunblock, body mass index, milk and juice intake were not associated with 25(OH)D level. Diabetic retinopathy was found in 4 subjects (8.2%), microalbuminuria in 14 subjects (28.5%), and nephropathy in 8 subjects (16.3%). All the subjects who suffered from microvascular complication had 25(OH)D level \leq 20 ng/mL. None of the subjects with 25 (OH)D > 20 ng/mL suffered had microvascular complication. There was no significant association between vitamin D level with diabetic retinopathy, microalbuminuria, or diabetic nephropathy.

Conclusion: None of the adolescent with type 1 DM had sufficient vitamin D level, and 87.8% had vitamin D deficiency. There was no association between vitamin D level with diabetic retinopathy, microalbuminuria, or diabetic nephropathy.