

TESIS

**KORELASI KADAR 25-HYDROXYVITAMIN D SERUM DENGAN
KONTROL GLIKEMIK PADA PASIEN DIABETES MELITUS
TIPE 2**



**PROGRAM STUDI PENYAKIT DALAM
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ABSTRAK

KORELASI KADAR 25-HYDROXYVITAMIN D SERUM DENGAN KONTROL GLIKEMIK PADA PASIEN DIABETES MELITUS TIPE 2

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Pendahuluan : Diabetes Melitus (DM) Tipe 2 adalah suatu kelompok penyakit metabolik dengan karakteristik hiperglikemia yang disebabkan oleh gangguan sensitivitas insulin dan pada perjalanannya dapat terjadi gangguan sekresi insulin. Penatalaksanaan DM Tipe 2 yang tepat bertujuan untuk mencapai kontrol glikemik yang baik sehingga dapat menurunkan risiko komplikasi akibat DM Tipe 2. Pemeriksaan HbA1c adalah pemeriksaan standar emas untuk menilai kontrol glikemik. Alternatif lain yaitu pemeriksaan kadar glukosa darah puasa (GDP) dan glukosa darah dua jam postprandial (GD2PP). Dalam beberapa penelitian terbaru, vitamin D berhubungan dengan sekresi insulin dan sensitivitas insulin. Kekurangan vitamin D berhubungan dengan gangguan homeostasis glukosa.

Metode: Penelitian ini merupakan penelitian observasional analitik dengan pendekatan *cross-sectional* yang dilaksanakan di Poliklinik Endokrin Metabolik Diabetes RSUP Dr. M. Djamil selama 6 bulan, 49 sampel yang memenuhi kriteria inklusi dan eksklusi dipilih secara *consecutive sampling*. Dilakukan pemeriksaan kadar 25-Hydroxyvitamin D serum, GDP, GD2PP, dan HbA1c pada pasien Diabetes Melitus Tipe 2. Selanjutnya dilakukan analisis statistik.

Hasil : Dari 49 sampel, jumlah subjek laki – laki hampir sama dengan perempuan, dengan rerata usia 58 tahun. Didapatkan penurunan kadar 25-Hydroxyvitamin D serum dengan median 27,87 ng/ml (12,626 -94,367). Ditemukan kontrol glikemik yang buruk, dengan median GDP 134 mg/dl (61-339), GD2PP 208 mg/dl (93-488) dan HbA1c 7,5% (5,6-12,8). Analisis menggunakan korelasi Spearman antara kadar 25-Hydroxyvitamin D serum dengan kadar GDP, GD2PP dan HbA1c, didapatkan nilai $r = -0,538$ dan $p = 0,000$, $r = -0,354$ dan $p 0,013$, $r = -0,501$ dan $p 0,000$.

Kesimpulan : Terdapat korelasi negatif yang bermakna secara statistik antara kadar 25-Hydroxyvitamin D serum dengan kadar GDP, GD2PP dan HbA1c pada pasien Diabetes Melitus Tipe 2.

Kata Kunci : Diabetes Melitus Tipe 2, 25-Hydroxyvitamin D serum, kontrol glikemik, glukosa darah puasa, glukosa darah dua jam postprandial, HbA1c.

ABSTRACT

CORRELATION OF SERUM 25-HYDROXYVITAMIN D LEVELS WITH GLYCEMIC CONTROL IN TYPE 2 DIABETES MELLITUS PATIENTS

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Introduction: Type 2 Diabetes Mellitus (T2DM) is a group of metabolic diseases with the characteristics of hyperglycemia caused by impaired insulin sensitivity and in the course of which insulin secretion can occur. Proper management of T2DM aims to achieve good glycemic control so as to reduce the risk of complications due to T2DM. HbA1c examination is the gold standard examination for assessing glycemic control. Another alternative is checking fasting blood glucose (FBG) and two-hour postprandial blood glucose (2-h PBG). In several recent studies, vitamin D is associated with insulin secretion and insulin sensitivity. Vitamin D deficiency is associated with impaired glucose homeostasis.

Method: This research is an analytical observational study with a cross-sectional approach carried out at the Endocrine Metabolic Diabetes outpatient clinic, RSUP Dr. M. Djamil for 6 months, 49 samples that met the inclusion and exclusion criteria were selected by consecutive sampling. Serum levels of 25-Hydroxyvitamin D, FBG, 2-h PBG and HbA1c were examined in T2DM patients. Furthermore, statistical analysis was carried out.

Results: From 49 samples included, the number of male subjects was almost the same as female, mean age was 58 years. There was a decrease in serum 25-Hydroxyvitamin D levels with a median of 27.87 ng/ml (12,626 -94,367). Glycemic control was found to be poor, the median of FBG levels was 134 mg/dl (61-339), 2-h PBG levels was 208 mg/dl (93-488) and HbA1c levels was 7.5% (5.6-12.8). Analysis using Spearman correlation between serum 25-Hydroxyvitamin D levels with levels of FBG, 2-h PBG and HbA1c showed values of $r = -0.538$ and $p = 0.000$, $r = -0.354$ and $p = 0.013$, $r = -0.501$ and $p = 0.000$.

Conclusion: There was a statistically significant negative correlation between serum 25-Hydroxyvitamin D levels and levels of FBP, 2h-PBG and HbA1c in T2DM patients.

Keywords: Type 2 Diabetes Mellitus, 25-Hydroxyvitamin D serum, glycemic control, fasting blood glucose, two-hour postprandial blood glucose, HbA1c.