

## Skor diagnostik hipotiroidisme pada pasien diabetes melitus tipe 2 = Hypothyroidism diagnostic score in type 2 diabetes mellitus patients

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### Abstrak

**ABSTRAK**  
Latar Belakang. Prevalensi disfungsi tiroid lebih tinggi pada pasien diabetes dibandingkan populasi umum. Hipotiroidisme memperburuk komplikasi, morbiditas, mortalitas, dan kualitas hidup pasien diabetes melitus tipe 2 (DM tipe 2). Faktor risiko hipotiroidisme pada pasien DM tipe 2 selama ini masih kontradiktif dan belum dikaji secara lengkap. Keberadaan sistem skor hipotiroidisme pada pasien DM tipe 2 diperlukan untuk membantu diagnosis dan menapis pasien DM tipe 2 yang memerlukan pemeriksaan laboratorium fungsi tiroid sebagai baku emas diagnosis hipotiroidisme. Tujuan. Mengetahui prevalensi dan determinan hipotiroidisme pada pasien DM tipe 2. Metode. Penelitian dengan desain potong lintang dilakukan di Poliklinik Divisi Metabolik Endokrin (Poliklinik Diabetes) RSCM pada Juli sampai September 2015 dengan metode sampling konsekutif. Subjek menjalani anamnesis, pemeriksaan fisis, dan pemeriksaan laboratorium (TSH dan FT4). Analisis data dilakukan dengan program statistik SPSS Statistics 17.0 untuk analisis univariat, bivariat, multivariat, dan Receiving Characteristics Operator (ROC) dan SPSS Statistics 20.0 untuk analisis bootstrapping pada Kalibrasi Hosmer-Lemeshow. Hasil. Sebanyak 303 subjek dianalisis untuk mendapatkan proporsi disfungsi tiroid dan 299 subjek dianalisis untuk mendapatkan determinan hipotiroidisme. Sebanyak 23 subjek (7,59%) terdiagnosis hipotiroidisme, terdiri dari 43,5% subjek hipotiroid klinis dan 56,5% subjek hipotiroid subklinis berdasarkan Indeks Zulewski dan/atau Indeks Billewicz, dengan 16,7% hipotiroid klinis dan 83,3% hipotiroid subklinis berdasarkan hasil pemeriksaan FT4. Determinan hipotiroidisme pada pasien DM tipe 2 adalah riwayat penyakit tiroid di keluarga dengan OR sebesar 4,719 (95% Interval Kepercayaan/IK 1,07-20,8,  $p = 0,04$ ), keberadaan goiter dengan OR sebesar 20,679 (95% IK 3,49122,66,  $p = 0,001$ ), kontrol glikemik yang buruk dengan OR sebesar 3,460 (95% IK 1,075-11,14,  $p = 0,037$ ), dan adanya sindrom metabolik OR sebesar 25,718 (95% IK 2,21-299,99,  $p = 0,01$ ). Simpulan. Proporsi hipotiroidisme pada pasien DM tipe 2 adalah 7,59%. Determinan diagnosis dan komponen sistem skor hipotiroidisme pada pasien DM tipe 2 adalah riwayat penyakit tiroid di keluarga, keberadaan goiter, kontrol glikemik yang buruk, dan adanya sindrom metabolik. Sistem skor yang diberi nama Skor Hipotiroid RSCM ini diharapkan menjadi alat bantu diagnosis hipotiroidisme pada pasien DM tipe 2.

**ABSTRACT**  
Background. Prevalence of thyroid dysfunction is greater in diabetes patients compared to general population. Hypothyroidism is worsening complications, morbidity, mortality, and quality of life in type 2 diabetes mellitus (T2DM) patients. Risk factors of hypothyroidism in T2DM patients are still

contradictive and not assessed completely. Presence of scoring system to estimate hypothyroidism in T2DM patients are needed to help diagnosing and screening of T2DM patients who need to undergo thyroid function test as a gold standard diagnostic for hypothyroidism.

Aim. To identify prevalence and estimators of hypothyroidism in T2DM patients.

Methods. A cross-sectional study was conducted in Metabolic Endocrine (Diabetes) Outpatient Clinic Cipto Mangunkusumo Hospital from July-September 2015 with consecutive sampling method. All subjects underwent interview, physical examination, and laboratory testing (TSH and fT4). Analysis was done by using SPSS Statistics 17.0 for univariate, bivariate, multivariate, and ROC (Receiving Operator Characteristics) analysis and SPSS Statistics 20.0 for bootstrapping analysis in HosmerLemeshow Calibration. Results. 303 subjects included for proportion study of thyroid dysfunction and 299 subjects included for analysis of hypothyroidism determinants. 23 subjects (7,59%) are diagnosed as having hypothyroidism, consisted of 43,5% clinical hypothyroidism and 56,5% subclinical hypothyroidism based on clinical scoring index by Zulewski and Billewicz, and 16,7% subjects as having clinical hypothyroidism and 83,3% subjects as having subclinical hypothyroidism based on fT4 examination. Determinants for hypothyroidism in T2DM patients are family history of thyroid disease with OR 4,719 (95% Confident Interval/CI 1,07-20,8,  $p = 0,04$ ), having goiter or difus struma with OR 20,679 (95% CI 3,49-122,66,  $p = 0,001$ ), poor glycemic control with OR 3,460 (95% CI 1,075-11,14,  $p = 0,037$ ), and metabolic syndrome with OR 25,718 (95% CI 2,21-299,99,  $p = 0,01$ ). Conclusion. Proportion of hypothyroidism in T2DM patients is 7,59%. Determinants and components

of scoring system of hypothyroidism in T2DM patients consist of family history of thyroid disease, having goiter or difus struma, poor glycemic control, and metabolic syndrome. Scoring system which is called RSCM Hypothyroid Score is expected to be a tool for helping diagnosis of hypothyroidism in T2DM patients.;Background. Prevalence of thyroid dysfunction is greater in diabetes patients compared to general

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