

Development of Scoring System for Risk Stratification of Hypothyroidism in Type 2 Diabetes Mellitus Patients in Indonesia

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Objective. Development of scoring system for risk stratification of thyroid dysfunction in type 2 is needed to screen patients who need to undergo thyroid function test. The aim of this study was to identify risks of having hypothyroidism in type 2 diabetes mellitus patients in tertiary hospital in Indonesia.

Methods. This was a cross-sectional study conducted in Endocrinology and Diabetes Outpatient Clinic Cipto Mangunkusumo Hospital from July-September 2015. All subjects underwent history taking, physical examination, and laboratory testing (TSH and fT4). Analysis was done by using SPSS Statistics 17.0 for multivariate and ROC analysis and SPSS Statistics 20.0 for Hosmer-Lemeshow Calibration.

Results. 303 subjects included in the study. 23 subjects (7.59%) are diagnosed as having hypothyroidism, consisted of 10 subjects (43.5%) clinical hypothyroidism and 13 subjects (56.5%) subclinical hypothyroidism based on Zulewski – Billewicz Clinical Index, and 8 subjects (34.8%) subjects as having clinical hypothyroidism and 15 subjects (65.2%) subjects as having subclinical hypothyroidism based on fT4 examination. Determinants for hypothyroidism in T2DM patients are family history of thyroid disease with OR 4.7 (95% CI 1.07-20.8, $p = 0.04$), having goiter with OR 20.7 (95% CI 3.49-122.66, $p = 0.001$), poor glycemic control with OR 3.5 (95% CI 1.08-11.14, $p = 0.037$), and metabolic syndrome with OR 25.7 (95% CI 2.2-299.99, $p = 0.01$).

Conclusion. Prevalence 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, poor glycemic control, and metabolic syndrome.