ABSTRAK

Pengembangan Skoring Klinis sebagai Prediktor Disfungsi Kardiak pada Pasien *Graves' Disease* dalam Terapi *Anti Thyroid Drugs*

Didik Supriyadi Kusumo B., M. Robikhul Ikhsan, Hasanah Mumpuni
Departemen Ilmu Penyakit Dalam, Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada

Latar Belakang

Graves' disease merupakan penyebab utama hipertiroidisme. Kondisi ini terutama yang tidak terkontrol maupun *prolonge hyperthyroidism* beresiko terjadi peningkatan morbiditas dan mortalitas penyakit kardiovaskuler, dengan prevalensi disfungsi tiroid pada gagal jantung dilaporkan sebesar 35,6%. Disfungsi tiroid merupakan faktor resiko yang dapat dimodifikasi pada pasien beresiko gagal jantung. Belum ada panduan yang memandu klinis untuk pemilihan terapi lini kedua, apakah tetap melanjutkan ATD atau beralih ke terapi definitif bila dihubungkan dengan kejadian disfungsi kardiak sehingga disusunlah penelitian ini.

Metode

Penelitian *cross sectional* dengan subyek pasien *Graves' disease* dalam terapi ATD diatas 9 bulan yang kontrol rutin di Poli Endokrinologi RSUP Dr. Sardjito Yogyakarta pada bulan April 2024-Juni 2024, dilakukan pemeriksaan ekokardiografi, kemudian ditelusur data rekam medisnya dari awal sakitnya. Analisis univariat, bivariat dan multivariat regresi logistik mengikuti metode *Spiegelhalter Knill-Jones.*

Hasil

Analisis data didapatkan 11 variabel prediktor untuk membangun sistem skoring, dengan skor awal 18, dan *cut-off point* < 20,5 dinyatakan terjadi disfungsi kardiak. Skoring ini mendapatkan sensitivitas 97,4%; spesifisitas 91,7%; *predicted positive value* 97,4%; *predicted negative value* 91,7%; *likelihood ratio positive* 11,7; *likelihood ratio negative* 0,03; akurasi 96,1%; dengan nilai AUC 94,6% (95% IK 84,9%-100,0%) dengan *p-value* 0,0001; maka sistem skoring ini mempunyai nilai diagnostik yang sangat baik. Validasi internal didapatkan hasil sensitivitas 81,3%; spesifisitas 88,9%; *predicted positive value* 92,9%; *predicted negative value* 72,7%; *likelihood ratio positive* 7,3; *likelihood ratio negative* 0,2; akurasi 84%.

Kesimpulan

Penelitian ini berhasil mengembangkan skoring klinis sebagai prediktor disfungsi kardiak pada pasien *Graves' disease* dalam terapi *anti thyroid drugs* dengan nilai uji diagnostik baik.

Kata Kunci

Graves' disease, *anti-thyroid drugs,* skoring klinis, panduan terapi

ABSTRACT

Development of Clinical Scoring as Predictor of Cardiac Dysfunction in Patients with Graves' Disease on Therapy with Anti-Thyroid Drugs Therapy

Didik Supriyadi Kusumo B., M. Robikhul Ikhsan, Hasanah Mumpuni
Department of Internal Medicine, Faculty of Medicine, Public Health, and Nursing
Universitas Gadjah Mada

Background

Graves' disease is the leading cause of hyperthyroidism. This condition, especially uncontrolled and prolonged hyperthyroidism, is at risk for increased cardiovascular disease morbidity and mortality, with the prevalence of thyroid dysfunction in heart failure reported at 35.6%. Thyroid dysfunction is a modifiable risk factor in patients at risk of heart failure. There is no clinical guidance for the selection of second-line therapy, whether to continue ATD or switch to definitive therapy when associated with the incidence of cardiac dysfunction, hence this study.

Methods

Cross sectional study with subjects of Graves' disease patients on ATD therapy above 9 months who had routine control at the Endocrinology Clinic of Dr. Sardjito Hospital Yogyakarta in April 2024-June 2024, echocardiographic examination was performed, then their medical records were traced from the beginning of their illness. Univariate, bivariate and multivariate logistic regression analyses followed the Spiegelhalter Knill-Jones scoring method.

Results

Data analysis obtained 11 predictor variables to build a scoring system, with an initial score of 18, and a cut-off point < 20.5 declared cardiac dysfunction. This scoring obtained a sensitivity of 97.4%, specificity of 91.7%, predicted positive value 97.4%, predicted negative value 91.7, positive likelihood ratio 11.7, negative likelihood ratio 0.03, accuracy 96.1%, with an AUC value of 94.6% (95% CI 84.9%-100.0%) with a p-value of 0.0001; then this scoring system has excellent diagnostic value. Internal validation obtained the results of sensitivity 81.3%, specificity 88.9%, predicted positive value 92.9%, predicted negative value 72.7%, likelihood ratio positive 7.3; likelihood ratio negative 0.2; accuracy 84%.

Conclusion

This study successfully developed clinical scoring as a predictor of cardiac dysfunction in Graves' disease patients under anti thyroid drugs therapy with good diagnostic test values.

Keywords

Graves' disease, anti-thyroid drugs, clinical scoring, therapeutic guidelines