Korelasi Hormon Tiroid dengan Resistensi Insulin dan Disfungsi Sel Beta Pankreas pada Pasien Penyakit Graves Fase Toksik = Correlation of Thyroid Hormone with Insulin Resistance and Pancreatic Beta Cell Dysfunction in Toxic Phase Graves' Disease

Firda Annisa, author

Abstrak

Latar belakang: Hormon tiroid berperan dalam regulasi metabolisme glukosa. Kondisi hipertiroid menyebabkan perubahan fungsi sel beta pankreas, percepatan pengosongan lambung, dan gangguan absorpsi glukosa di usus yang menyebabkan kelainan metabolisme glukosa hingga terjadinya resistensi insulin dan disfungsi sel beta pankreas. Tujuan: Mengetahui korelasi kadar hormon tiroid dengan resistensi insulin dan disfungsi sel beta pankreas pada pasien penyakit Graves fase toksik. Metode: Penelitian ini menggunakan desain potong lintang untuk menilai HOMA-IR dan HOMA-B pada pasien penyakit Graves fase toksik. Penelitian dilakukan di RS Cipto Mangunkusumo dari Januari 2019 hingga Agustus 2020. Kriteria inklusi penelitian ini yaitu pasien penyakit Graves usia 18-65 tahun, belum menerima terapi obat antitiroid atau sudah diberikan terapi obat selama maksimal 1 bulan dan masih dalam fase toksik. Analisis data menggunakan korelasi Pearson. Hasil: Dari total 38 pasien dengan kecurigaan penyakit Graves, 2 pasien dieksklusi dari penelitian karena hasil TRAb negatif. Pada studi ini ditemukan bahwa tidak terdapat korelasi antara kadar T4 bebas dengan resistensi insulin (r 0,208 ; p 0,298) dan disfungsi sel beta pankreas (r 0,215 ; p 0,928) pada pasien penyakit Graves fase toksik. Tidak ditemukan juga korelasi antara TSH dan T3 total dengan resistensi insulin dan disfungsi sel beta pankreas. Didapatkan korelasi yang kuat dan bermakna antara HOMA-IR dan HOMA-B (r 0,991 ; p 0.000). Kesimpulan: Tidak didapatkan korelasi antara kadar hormon tiroid (T4 bebas, T3 total, dan TSH) dengan resistensi insulin dan disfungsi sel beta pankreas.
.....Background: Thyroid hormones play a significant role in glucose metabolism. Hyperthyroid cause changes in pancreatic beta cell function, accelerated gastric emptying, and impaired glucose absorption in the intestine which cause abnormality in glucose metabolism, resulting in insulin resistance and pancreatic beta cell dysfunction. Aim: To determine correlation of thyroid hormone with insulin resistance and pancreatic beta cell dysfunction in toxic phase Graves’ disease patients. Method: This study is a cross-sectional study to assess HOMA-IR and HOMA-B in toxic phase Graves’ disease patients. The research was conducted at Cipto Mangunkusomo Hospital from January 2019 to August 2020. Inclusion criteria for this study were Graves’ disease patients aged 18-65 years, never received anti-thyroid medication or anti-thyroid medication had been given for maximum of 1 month and patient still in the toxic phase. Data analysis used Pearson correlation. Results: From 38 patients suspected with Graves’ disease, 2 patients were excluded from the study because of negative TRAb results. This study found there was no correlation between free T4 levels and insulin resistance (r 0,208; p 0,298) and pancreatic beta cell dysfunction (r 0,215; p 0,928) in toxic phase Graves’ disease patients. There was also no correlation found between TSH and total T3 with insulin resistance and pancreatic beta cell dysfunction. A strong and significant correlation was found between HOMA-IR and HOMA-B (r 0,991; p 0.000). Conclusion: There was no correlation between thyroid hormone (free T4, total T3, and TSH) and insulin resistance. Thyroid hormones also did not correlate with pancreatic beta cell dysfunction.