Peran gen Cytotoxic T Lymphocyte Associated Protein 4 (CTLA-4), gen tiroglobulin, gen Thyroid Stimulating Hormone Receptor (TSHR), dan sel T regulator sebagai faktor risiko kambuh pada penyakit graves = The role of cytotoxic t lymphocyte associated protein 4 (CTLA-4) gene, thyroglobulin gene, thyroid stimulating hormone receptor (TSHR) gene, and regulatory T cell as risk factor for relapse in patients with graves disease

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Abstrak

Latar Belakang: Penelitian ini bertujuan untuk mengetahui faktor-faktor yang memengaruhi terjadinya kekambuhan seperti, faktor klinis yaitu usia dan jenis kelamin, riwayat keluarga, besarnya ukuran kelenjar tiroid, ada tidaknya oftalmopati; faktor genetik yang berperan pada kejadian GD; dan faktor imunologi yaitu jumlah sel T regulator, kadar interleukin 10 (IL-10), interleukin 17 (IL-17) dan antibodi pada reseptor tiroid (TRAb).
Metode: Penelitian ini merupakan studi kasus kontrol yang membandingkan 36 pasien GD yang kambuh dan 36 pasien GD yang tidak kambuh. Pemeriksaan polimorfisme gen dilakukan dengan metode PCR RFLP. Pemeriksaan jumlah sel T regulator dengan flowsitometri. Pemeriksaan IL-10, IL-17 dan TRAb dengan ELISA.
Hasil: Analisis hasil penelitian membuktikan hubungan antara kekambuhan dengan faktor keluarga (p 0,008), usia saat didiagnosis (p 0,021), oftalmopati derajat 2 (p 0,001), kelenjar tiroid yang membesar melebihi tepi lateral muskulus sternokleidomastoideus (p 0,040), lamanya periode remisi (p 0,029), genotip GG gen CTLA-4 nukleotida 49 kodon 17 pada ekson 1 (p 0,016), genotip CC gen tiroglobulin nukleotida 5995 kodon 1980 pada ekson 33 (p 0,017), genotip CC gen TSHR SNP rs2268458intron 1 (p 0,003), jumlah sel T regulator (p 0,001), kadar IL-10 (p 0,012) dan kadar TRAb (p 0,002). Penelitian ini juga membuktikan hubungan antara faktor klinis yaitu faktor keluarga, usia, oftalmopati, pembesaran kelenjar tiroid dan lamanya periode remisi; dengan faktor genetik dan respons imun.
Simpulan: Polimorfisme genotip gen CTLA-4 nukleotida 49 kodon 17 ekson 1, gen tiroglobulin nukleotida 5995 kodon 1980 ekson 33, gen TSHR SNP rs2268458 intron 1 dan sel T regulator berperan sebagai faktor risiko kambuh pada pasien penyakit Graves.
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Background: The management of Graves? disease (GD) is initiated with the administration of antithyroid drugs; however, it requires a long time to achieve remission and more than 50 percent of patients who had remission may be at risk for relapse after the drug is stopped. This study was aimed to identify factors affecting relapse of Graves? Disease
Methods: This was a case-control study comparing 36 patients relapsed GD and 36 patients who did not relapse. Genetic polymorphism examination was performed using PCR-RFLP. The number of regulatory T cells was counted using flow cytometry analysis and ELISA was used to measure serum IL-10, IL-17 and TRAb.
Results: The analysis of this study demonstrated that there was a correlation between relapse of disease and

family factors (p 0.008), age at diagnosis (p 0.021), 2nd degree of Graves? ophthalmopathy (p 0.001), enlarged thyroid gland, which exceeded the lateral edge of the sternocleidomastoid muscles (p 0.040), duration of remission period (p 0.029), GG genotype of CTLA-4 gene on the nucleotide 49 at codon 17 of exon 1 (p 0.016), CC genotype of thyroglobulin gene on the nucleotide 5995 at codon 1980 of exon 33 (p 0.017), CC genotype of TSHR gene on the rs2268458 of intron 1 (p 0.003), the number of regulatory T cells (p 0.001), the levels of IL-10 (p 0.012) and TRAb levels (p 0.002). This study also showed the association between clinical factors, which included family factors, age at diagnosis, ophthalmopathy, thyroid gland enlargement and the long periods of remission with genetic factors and immune response.
Conclusion: Genetic polymorphisms of CTLA-4 gene on the nucleotide 49 at codon 17 of exon 1, thyroglobulin gene on the nucleotide 5995 at codon 1980 of exon 33, TSHR gene SNP rs2268458 of intron 1 and regulatory T cells play a role as risk factors for relapse in patients with Graves? disease.