

ABSTRAK

Diabetes melitus (DM) tipe dua terjadi akibat resistensi insulin di jaringan perifer sehingga sel-sel tubuh tidak bisa menggunakan hormon insulin secara efektif. Akibatnya, kemampuan sel beta pankreas akan menurun dan berlanjut menjadi hiperglikemia kronis. Hiperglikemia kronis mengarah pada pembentukan produk akhir glikosilasi lanjutan (AGEs). AGEs dapat menjadi sinyal adanya inflamasi sehingga meningkatkan ekspresi mediator pro inflamasi seperti *C-Reactive Protein* (CRP). Kadar CRP diukur secara kuantitatif menggunakan *high sensitivity C-Reactive Protein* (hs-CRP) pada penderita DM Tipe 2. Penelitian bertujuan untuk mengetahui adanya korelasi antara kadar *Glycosylated Hemoglobin* (HbA1c) sebagai salah satu indikator kontrol glikemik, dan kadar *high sensitivity C-Reactive Protein* hs-CRP sebagai salah satu indikator inflamasi pada penderita Diabetes Melitus tipe 2.

Jenis dan rancangan penelitian yang digunakan penelitian kuantitatif dengan pendekatan observasional analitik. Pemeriksaan HbA1c menggunakan metode *Turbidimetric Inhibition Immunoassay* (TINIA) dan pemeriksaan hs-CRP menggunakan metode *Immunoturbidimetry Assay* di Instalasi Laboratorium Patologi Klinik Rumah Sakit Umum Daerah Haji Provinsi Jawa Timur pada bulan April s/d Mei 2022 dengan jumlah responden sebanyak 30 pasien diabetes berdasarkan kriteria inklusi dan eksklusi. Data hasil pemeriksaan kadar HbA1c dan hs-CRP dikumpulkan dan dianalisis dengan Uji Korelasi Bivariat Spearman. Dari hasil uji korelasi Spearman didapatkan kesimpulan bahwa tidak terdapat korelasi antara kadar HbA1c dan kadar hs-CRP pada penderita DM tipe 2, mayoritas responden pada penelitian ini yakni sebanyak 40% memiliki kadar HbA1c tinggi dan kadar CRP normal ($p > 0,05$; $r = 0,106$).

Kata Kunci: Diabetes Melitus tipe 2, HbA1c, *high sensitivity-C Reactive Protein*, Inflamasi.

ABSTRACT

Diabetes mellitus (DM) type two is caused by increasing insulin resistance in peripheral tissues, preventing the body's cells from adequately utilizing the hormone insulin. As a result the ability of pancreatic beta cells decreases, resulting chronic hyperglycemia. Chronic hyperglycemia leading to the formation of advanced glycosylation end products (AGEs). AGEs can be a signal of inflammation which increase the expression of pro-inflammatory mediators such as C-Reactive Protein (CRP). CRP levels were measured quantitatively using high sensitivity C-Reactive Protein (hs-CRP) in patients with Type 2 DM. This study aimed to determine the correlation between levels of Glycosylated Hemoglobin (HbA1c) as an indicator of glycemic control, and levels of high sensitivity C-Reactive Protein hs-CRP as an indicator of inflammation in patients with Type 2 Diabetes Mellitus.

The research method and design employed are quantitative research using an analytical observational approach. HbA1c examination using the Turbidimetric Inhibition Immunoassay (TINIA) method and hs-CRP examination using the Immunoturbidimetry Assay method at the Clinical Pathology Laboratory Installation at Haji Regional General Hospital, East Java Province, from April to May 2022, with a total of 30 diabetes patients based on inclusion and exclusion criteria. The results of the examination of HbA1c and hs-CRP levels were collected and analyzed using the Spearman Bivariate Correlation Test. According to the results, it was concluded that there was no correlation between HbA1c and hs-CRP levels in type 2 diabetes patients. In this study, the majority of respondents, up to 40%, had high HbA1c levels and normal CRP levels. ($p>0.05$; $r=0.106$).

Key words: Type 2 diabetes melitus, HbA1c, *high sensitivity-C Reactive Protein*, Inflammation.