Korelasi Citrullinated Histone H3 (CIT-H3) dengan Parameter Hematologi Subjek Leukemia dan Limfoma Pasca Pandemi COVID-19 = Correlation of Citrullinated Histone H3 (CIT-H3) with Hematological Parameters of Leukemia and Lymphoma Subjects Post COVID-19 Pandemic

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Abstrak

Kanker darah leukemia dan limfoma merupakan salah satu komorbid dari Coronavirus Disease 2019 (COVID-19) yang dapat mengurangi efektivitas vaksin. Perkembangan leukemia dan limfoma dapat dideteksi dengan menggunakan protein citrullinated histone H3 (CIT-H3) yang merupakan hasil sitrulinasi enzim peptidilarginin deiminase 4 (PAD 4) pada neutrofil. Protein CIT-H3 umumnya dapat dijadikan biomarker perkembangan kanker karena kadarnya yang mengalami kenaikan pada subjek leukemia dan limfoma. Kenaikan tersebut juga ditemukan pada subjek COVID-19. Tujuan dari penelitian ini adalah untuk mengetahui korelasi kadar CIT-H3 dengan parameter hematologi pada subjek leukemia dan limfoma berupa hemoglobin, leukosit, trombosit, limfosit, neutrofil, serta absolute neutrophil count (ANC). Penelitian dilakukan dengan menggunakan metode enzyme linked immunosorbent assay (ELISA) untuk memeriksa kadar CIT-H3 dari 40 sampel serum darah subjek leukemia dan limfoma yang telah divaksinasi COVID-19 minimal sebanyak dua kali atau telah mengalami infeksi COVID-19 sebelumnya. Hasilnya didapatkan bahwa kadar CIT-H3 berkorelasi positif dengan parameter ANC (r= 0,04, p= 0,34) pada karakteristik komorbid subkelompok subjek dengan komorbid. Dapat disimpulkan bahwa terdapat korelasi positif antara kadar CIT-H3 dan ANC.

......Leukemia and lymphoma blood cancer are comorbidities of Coronavirus Disease 2019 (COVID-19) which can reduce the effectiveness of vaccines. Metastases of leukemia and lymphoma can be detected using citrullinated histone H3 (CIT-H3) protein which is the result of citrullination of the peptidylarginine deiminase 4 (PAD 4) enzyme present in neutrophils. The CIT-H3 protein can generally be used as a biomarker for cancer metastases because of the increase in its levels in leukemia and lymphoma subjects. This increase was also found in the subject of COVID-19. This study aimed to determine the correlation of CIT-H3 levels with hematological parameters in leukemia and lymphoma subjects such as hemoglobin, leukocytes, platelets, lymphocytes, neutrophils, and absolute neutrophil count (ANC). The research was carried out using the enzyme-linked immunosorbent assay (ELISA) method to examine CIT-H3 levels from 40 blood serum samples from leukemia and lymphoma subjects who had been vaccinated against COVID-19 at least twice or had experienced previous COVID-19 infection. The results showed that CIT-H3 levels were positively correlated with ANC parameters in the comorbid characteristics of the subgroup of subjects with comorbidities (r= 0,04, p= 0,34). It can be concluded that there is a positive correlation between CIT-H3 levels and ANC.