

Title: The Impact of COVID 19 to Develop Acute Lymphocytic Leukemia Among Iraqi Patients

Mufeed J. Ewadh

University of Babylon, , Iraq



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The present study aims to evaluate of COVID 19 (COV19) virus on developing acute lymphocytic leukemia (ALL) among Iraqi patients after recovering from a severe infection from the coronavirus epidemic. One hundred and fifty severely infected people with coronavirus included in this case control study, thirteen of them developed ALL after recovering from COV19 infection, in addition to healthy people (control group) who did not have COV19 infection until the time of the study. The present study was approved by the local ethics committee. All persons participated in this study was agreed to participate and signed an informed consent. The period of this study extended from October 2020 to October 2021. This work was done in the Department of Biochemistry, College of Medicine University of Babylon, The Oncology Center at Marjan Teaching Hospital and the intensive care ward at Hilla Republican Hospital in Hilla City, Iraq. All cases of COV19 were previously diagnosed by swabs (polymerase chain reaction), ALL cases were previously diagnosed by bone marrow biopsy. Various circulating biomarkers were investigated including hematological, hepatic and renal profiles as well as oxidative stress markers, electrolytes and vitamins C and E.

Results show that vitamin E was found to be decreased in patients with ALL ($P < 0.01$). Malondialdehyde (MDA) levels were very high in ALL ($ALL-B = 8.69 \pm 1.59$) compared to controls (1.22 ± 0.10 ; $P < 0.001$) while the levels of antioxidants [superoxide dismutase (SOD), glutathione peroxidase (GPx), reduced glutathione (GSH), catalase (CAT)], platelets, as well as electrolytes (Ca

and Mg) were reduced in patients suffering from ALL. Enhanced levels of oxidative stress (MDA) and decreased levels of enzymatic and non-enzymatic antioxidants reflect the pathological state and impaired cell control in patients suffering from ALL and show a strong correlation with oxidative stress, indicating that patients' biological systems are under oxidative stress.

Biography

Mufeed Ewadh currently works at the Clinical biochemistry, University of Babylon. Mufeed does research in Biochemistry. Their most recent publication is 'ESTIMATE GSH-PX AND GST IN BENZENE TREATED MICE'.