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ABSTRACT

Chemotherapy Induced Liver & Kidney Complication in Hodgkin Lymphoma Patient in West Bank

Donia Khalid Tomizy¹, Manar Rouhe Alsharabate¹, Haneen Nur², Firas Almahmud¹.

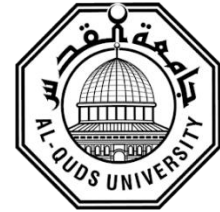
¹ Palestine(Hebron), Hebron University, Faculty of Pharmacy and Medical Laboratory Science, Medical Laboratory Science.

² Dean of Faculty of Pharmacy and Medical Laboratory Science.

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Background: Lymphomas are a type of cancer that affects the lymphatic system. It is caused by an accumulation of malignant lymphocytes in lymph nodes and other lymphoid tissues, which results in defining the clinical features of lymphadenopathy. Based on the histological presence of Reed-Sternberg cells in Hodgkin Lymphoma, it is generally divided into two categories: Hodgkin lymphoma (HL) and non-Hodgkin lymphoma (NHL). Hodgkin's lymphoma accounts for about 10% of all lymphomas, and the remaining 90% are referred to as NHL. According to the statistics of the Palestinian Ministry of Health for the year 2021, NHL and HL ranked the seventh and the ninth, respectively, among the most prevalent types of cancer in the West Bank. Although cytotoxic therapy prolongs the survival of patients with advanced and metastatic cancers, but there are significant drawbacks to this double-edged sword. Most of the drugs and foreign substances that enter the body have side effects, including chemotherapy, which shows several side effects on liver and kidneys, as both are responsible for the elimination of poisons, drugs, and endogenous metabolic products.

Objectives: This study is aimed to investigate the relationship between chemotherapy and hepato-renal complications in patients with Lymphoma in Palestine. In addition to improve the awareness of lymphoma patients towards palliative care to be provided along with curative treatment.



Methods: A descriptive cross-sectional study was performed based on the collection of data for 234 HL patients (120 males and 114 females) aged >18 years old were admitted to the oncology department of Beit-Jala governmental hospital (Harmala) from 2012 to 2022. All selected patients were diagnosed with HL without any previous history of chronic disease or chemotherapy treatment and so they fulfilled the inclusion criteria. Data were entered into Microsoft office excel, and transferred to Statistical Package for Social Sciences (SPSS) version 23 for analysis in a time-dependent manner. Data includes non-invasive test markers for liver disease assessment including AST, ALT, AST/ALT ratio, ALP, Total Protein, Total Bilirubin, and albumin as well as non-invasive markers for kidney disease assessment including creatinine, BUN, uric acid, and electrolytes (i.e., Sodium, Potassium, Magnesium, Chloride, Calcium).

Results: The data analysis showed the cytotoxic effect of chemotherapy on hepatocytes among HL patients. The liver enzymes (ALT, AST, Alk-P) concentration results increased markedly among the study population in the blood samples collected during chemotherapy treatment (P Value = 0.002, 0.02, 0.001 respectively) in a comparison to the results of the patient's sample before treatment. All males and all patients whose ages were between 18-30 years showed the highest mean of difference for ALT, and AST results among pre-treatment and during-treatment samples. On the other hand, neither urea (P value =0.89) nor creatinine (P value = 0.34) had a statistically significant difference among the same previous samples.

Conclusion: Further research must be conducted to investigate the cytotoxic effect of chemotherapy on other biochemical markers among a larger group of HL patients, and to develop algorithms for management of a cancer patient.

Keywords: Hodgkin Lymphoma, Chemotherapy, Liver & Kidney Complications.