

The Effect on Liver and Renal Function Following Chemotherapy Treatment for Breast Cancer Patients in Oncology Clinic of University Hospital, Kotelawala Defence University

EPEDZ Siriwardana¹, RMUM Rathnayake¹, BUS Himasha¹,
S Malaviarachchi² and JMKB Jayasekara^{1#}

¹*Department of Medical Laboratory Sciences, Faculty of Allied Health Sciences,
General Sir John Kotelawala Defence University, Sri Lanka*

²*Oncology Unit, University Hospital, Kotelawala Defence University*

#kbjayasekara@gmail.com

Breast cancer is the frequently diagnosed cancer in the world and the highest mortality among women. The aim of this study was to evaluate the effect of standard chemotherapy treatment (dose adjusted for Sri Lankan population) which included Doxorubicin, Cyclophosphamide and Paclitaxel schedule on liver and renal function of breast cancer patients. Both prospective and retrospective cross-sectional study was conducted on seventy-five breast cancer patients who participated in the oncology clinic at UHKDU. Those who underwent the same standard chemotherapy treatment with normal baseline liver and renal function tests were recruited for the study. Mean age and BMI of the study population were 54.04±11.33 years and 26.7±3.89 respectively. Mean values of serum SGOT, SGPT, Creatinine and eGFR were identified as 27.57 U/L, 31.32 U/L, 0.71 mg/dL and 99.07 ml/min/1.73m² before the commencement of 16 coursed chemotherapy treatment. Mean values of SGOT and SGPT showed a statistically significant increase ($p < 0.05$) during the chemotherapy treatment while mean creatinine and mean eGFR values had no statistical differences ($p > 0.05$) with the initial laboratory test values. Significant positive correlations were identified in SGOT ($r = 0.793$) and SGPT ($r = 0.872$) values however eGFR showed a significant negative correlation ($r = -0.757$) with the chemotherapy cycle. Further, serum creatinine levels and chemotherapy cycle ($r = 0.579$) also showed a positive significant correlation. In conclusion, there was a statistically significant effect on liver function and no significant effect on renal function due to the dosed adjusted chemotherapy treatment schedule used on the study population. The study recommends further studies to assess long term effects on liver and kidney functions following standard chemotherapy treatment.

Keywords: *breast cancer, liver function, renal function, chemotherapy, doxorubicin, cyclophosphamide, paclitaxel*