

Effects of Occupational Exposure of X-Ray on Hematological Parameters of Diagnostic Technicians

Ali H. Taqi^{1,*}, Kharman A. Faraj², Sarah A. Zaynal¹,

Ahmed M. Hameed³ and Abd-Alkader A. Mahmood⁴

¹ *Department of Physics, College of Science, Kirkuk University, Kirkuk, Iraq.*

² *Department of Physics, College of Science, University of Sulaimani, Kurdistan Region-Iraq.*

³ *Hematology Laboratory, Kirkuk general hospital, Kirkuk, Iraq.*

⁴ *Laboratory Department, Kirkuk Health Directorate, Kirkuk, Iraq.*

Abstract: The aim of this study was to identify the effects of long term exposure of x-ray on diagnostic technicians which they work at Kirkuk hospitals through examining some hematological parameters which are white blood cells (WBC), Neutrophils, Lymphocyte, Monocyte, Eosinophil, Basophil, Reactive Lymphocyte, red blood cells (RBC), hemoglobin (Hb), hematocrit (HCT), mean cell volume (MCV), mean Corpuscular hemoglobin (MCH), mean cell hemoglobin concentration (MCHC), Red cell Distribution Width (RDW), platelet (PLT). The study included 54 male diagnostic technicians and 54 male healthy controls match with the first group to show any alteration of the hematological parameters. The diagnostic technicians divided into two groups depending on their work experience and hours working per day. The statistical analysis was performed using (Graph-pad) program. Our results show that the Complete blood cells count (CBC) parameters (Neutrophil, Monocytes, Basophile, MCV, RDW and PLT) significantly ($P < 0.05$) decreased while the parameters (Lymphocytes, RBC, Hb and HCT) significantly ($P < 0.05$) increased and strong significantly ($P < 0.0001$) increasing was recorded for the parameter Reactive lymphocytes mostly in all groups of the diagnostic technicians compared with their controls. We concluded that chronic exposure of x-ray can significantly alter some hematological parameters and the number of hours working per day has observable effects on the some hematological parameters. We recommended training and courses about hazard of ionizing radiation should be organized for enhance the healthcare quality of the technicians and to improve their knowledge about benefit of radiation protection tools to protect themselves from any overexposure during the daily life.

Keywords: X-ray, chronic exposure, diagnostic, hematological parameters, radiography

* alitaqi@uokirkuk.edu.iq; alitaqibayati@yahoo.com.

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