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Biochemical study of enzymatic antioxidant for the impact of benzene pollution on albino Swiss mice as a risk factor of acute leukemia

Mufeed Jalil Ewadh

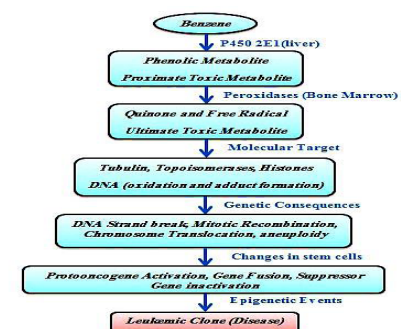
University of Babylon, Iraq

Theoretical: Leukemia is cancer of blood-forming tissues which starts in the bone marrow; characterized by highly elevated abnormal proliferation and circulation of immature clonal hematopoietic cells, hence leukemia is commonly referred to hematological neoplasms. There are two main categories of leukemia etiology: inherited and acquired. Several factors have been implicated in the causation of acquired Leukemia such as pollution and exposure to chemicals such as benzene.

Aim of the Study: The present study aimed to evaluate activity and efficiency of enzymatic antioxidant system - representative with GSH-Px and GST in case of acquired leukemia injury.

Methodology: The present study included (30) albino male mice divided into two groups with count (15) mice for each. Group (A) was the control group while group (B) was induced leukemia mice by subcutaneous injection of (300 mg/kg BW benzene). Shimadzu UV-Vis spectrophotometer has been used for estimation of GSH-Px and GST activities using special kits.

Conclusion: This study concluded that leukemia leads to imbalance oxidant-antioxidant system causing high oxidative stress and ROS production which in turn causes non-specific oxidative damage to biomolecules in myeloid cells resulting in the development/increase in leukemia.



Scheme (1): Mechanistic hypothesis of benzene (leukemogenesis)

Biography

Mufeed Jalil Ewadh has his expertise in Biochemistry. He has participated in many international and local conferences and workshops which deal with improvement of biochemical research to increase people awareness about its role. He has participated in Post- doctorate course in Marburg University (Germany) in 2005, and has participated in Electrophoresis Workshop in Japan for two weeks as well as in Biochemical Workshop in Leipzig (Germany), 2016. He has published more than 134 papers in different local and international journals.

mewadh@yahoo.com

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