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The diagnostic and prognostic value of kinesin-4A protein, β tubulin protein and exosomes as non-invasive biomarkers in Iraqi women with breast cancer

The study aims to evaluate the diagnostic and prognostic value of kinesin-4A, β Tubulin and Exosomes as non-invasive biomarkers in Iraqi women with breast cancer first diagnosed and after mastectomy. Seventy Iraqi women with breast cancer diagnosed for the first time participated in the study, also seventy healthy women (control group) who did not have breast cancer. The 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 February 2021 to October 2022. This work was done in the Department of Biochemistry, College of Medicine, University of Babylon, The Oncology Center at Marjan Hospital and Surgical ward at Hilla Teaching Hospital in Hilla City, Iraq. All cases of breast cancer were diagnosed by Mammography, Various circulating biomarkers and tumor markers were investigated including hematological and hepatic as well as oxidative stress markers, Serum Kinesin-4A (KIF4A), serum β Tubulin (TUBB) and plasma Exosomes (EVs).

Results at first time diagnosis show that (KIF4A) found to be increased in women with breast cancer ($P<0.01$). (β TUBB) levels were very high in breast cancer women (221.3 ± 17.2) compared to controls (33.4 ± 3.1; $P<0.001$) while the levels of (EVs) was extremely high in breast cancer women compared to control group ($P<0.001$). Two weeks after the mastectomy, the results of Kinesin-4A, β Tubulin and Exosomes were dropped dramatically near to normal levels. Results suggest that different types of breast cancer can altered several aspects of host immunity causing increased production of specific immune product. And these products can use as diagnostic and prognostic markers to reduce invasive procedures such as surgeries or radiation exposure.

Biography

Mufeed Jalil Ewadh has his expertise in many fields of biochemistry research in his institute dealing with health problem, herbal extraction, alternative medicine. He participated in many international and local conferences and workshops which deal with improvement of biochemical research to increase people awareness about its role. He participated in post doctorate course in Marburg University (Germany) on 2005 and he participated in electrophoresis workshop in japan for two weeks as well as in biochemical workshop in Leipzig

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