

# Dedication

*To all those who supported me.....*

*To my mother for their love and care and any things.....*

*To my father for their continuous guidance in each and every step.....*

*To my teachers ... who are always ready to help me.....*

*To my lovely brothers, friends, sisters and breast cancer patients.....*

## Acknowledgment

*All my praise and thanks to Allah who help me and give me confidence to complete this study.*

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## **Abstract**

Breast cancer is a common disease with major public health implications. Some evidence suggests that prolactin hormone and lipid profiles (Total cholesterol, TG, HDL-cholesterol and LDL-cholesterol) may acts as predisposing factors for the development and metastasis of breast cancer, through the differentiation and proliferation of breast cells.

A descriptive cross-sectional study was carried out to evaluate serum prolactin hormone and lipid profiles levels in women with breast cancer, and to correlate serum prolactin hormone and lipid profiles levels with risk factors of breast cancer. Sixty patients with breast cancer and fifty healthy individuals as control group were enrolled in this study; the study was carried out in radio and isotope center Khartoum (RICK), during the period from February to July 2014. Serum prolactin hormone level in patient group was estimated using ELISA sandwich assay, serum lipid profiles level was estimated by enzymatic method, data analyzed using T-test in SPSS computer program.

The results showed hyperprolactinemia in breast cancer patients (76%), when the age increase there is significant decrease of prolactin hormone ( $P\text{-value} < 0.05$ ). There is significant increase in the mean of Total-C, TG and LDL-cholesterol levels between patients and control ( $p\text{-value} < 0.05$ ). The result of HDL-cholesterol showed insignificant difference in the mean between patients and control ( $p\text{-value} > 0.05$ ).

In conclusion, prolactin hormone level increased in women with breast cancer and inversely correlated with age. Further investigation is needed to determine the association between prolactin hormone and lipid profiles levels versus breast cancer stage and metastasis.

## المستخلص

سرطان الثدي من الأمراض الشائعة وله تأثيرات كبيرة على الصحة العامة. تشير بعض الدراسات على أن هرمون البرولاكتين والمواد الدهنية (الكوليسترول الكلي، الدهون الثلاثية، الكوليسترول النافع و الكوليسترول الضار) تعتبر من العوامل المؤثرة في الإصابة بسرطان الثدي. من خلال عملهم على تمايز خلايا الثدي و تكاثرها.

أجريت هذه الدراسة المقطعية الوصفية من أجل تقييم مستويات هرمون البرولاكتين والمواد الدهنية في مصل النساء المصابات بسرطان الثدي ولربط مستويات هرمون البرولاكتين والمواد الدهنية مع عوامل خطر الإصابة بسرطان الثدي.

ستين من المرضى الذين يعانون من سرطان الثدي و خمسين من الأفراد الأصحاء كمجموعة ضابطة تم شملهم في هذه الدراسة، وقد أجريت هذه الدراسة في مركز الخرطوم للعلاج بالاشعاع والطب النووي في الفترة من فبراير الى يوليو خلال العام 2014 م.

تم قياس هرمون البرولاكتين في مصل الدم للمرضى بواسطة تقنية الانزيم المناعي المرتبط بينما تم قياس المواد الدهنية بالطرق الإنزيمية. تحليل البيانات تم باستخدام اختبار (ت) في برنامج الكمبيوتر (SPSS) .

أظهرت النتائج أن مستوى هرمون البرولاكتين إزداد بشكل ملحوظ في مجموعة المرضى (76%) كما أن هناك انخفاضا ملحوظا في هرمون البرولاكتين مع ازدياد الفئة العمرية.

هنالك فرق في متوسط مستويات الكوليسترول الكلي، الدهون الثلاثية والكوليسترول الضار بين المرضى والمجموعة الضابطة، بينما لا يوجد فرق في متوسط مستوي الكوليسترول النافع بين المرضى والمجموعة الضابطة.

وخلصت الدراسة إلى أن مستوى هرمون البرولاكتين يزداد في النساء المصابات بسرطان الثدي ومستواه يرتبط عكسياً مع السن، هناك حاجة إلى إجراء مزيد من الدراسات لتحديد العلاقة بين مستويات هرمون البرولاكتين والمواد الدهنية مقابل مرحلة سرطان الثدي و الورم الخبيث.

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