

الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ تَعَالَى :

(هَلْ أُنِى عَلَى الْإِنْسَانِ حِينَ مِّنَ الدَّهْرِ لَمْ يَكُنْ شَيْئًا مَّذْكُورًا) (١)

إِنَّا خَلَقْنَا الْإِنْسَانَ مِنْ نُطْفَةٍ أَمْشَاجٍ نَّبْتَلِيهِ فَجَعَلْنَاهُ سَمِيعًا بَصِيرًا (2) .

صدق الله ۞ الْعَظِيم

سورة الانسان الايات: (1-2)

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Dedication

To that man who is bright as the moon

My father.

To my beloved who is always encouraging me and help me in my live

My mother.

To my lovely brothers& sisters.

To all my friends in medical laboratory science.

To my wonderful supervisor who was with me when I need her.

To all teachers from whom I learned in my life.

I dedicate this work.

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Also thanks for all females from whom the sample had been collected.

To all of them, many thanks and regards.

Abstract

This is a case- control study aimed to measure serum iron and total iron binding capacity (TIBC) in Sudanese females newly diagnosed with breast cancer in the Radio Isotope Center Khartoum (RICK) and apparently healthy Sudanese females.

Venous blood samples were collected from 50 females with breast cancer referred to RICK and 70 samples from apparently healthy females as control group from attendants of Primary Health Centers in Khartoum State. Case and control groups were matched for age group and parity.

Measurement of serum iron and TIBC was performed by using manual method (IRON-FERROZINE) and transferrin saturation percent was calculated after measurement of serum iron and TIBC. The collected data were analyzed by SPSS computer program (IBM SPSS version 22.0).

The mean age \pm SD in case group was 47.0 ± 12.7 years and 42.0 ± 13.0 years in control group, mean of parity number \pm SD was 4.0 ± 3.8 times in case and control groups in married females.

The result showed that the mean of serum iron \pm SD in case group was $244.30 (\mu\text{g/dL}) \pm 151.598$ and in control group was $57.59 (\mu\text{g/dL}) \pm 43.191$ (P.value = 0.000).

Mean of TIBC \pm SD in case group was $412.98 (\mu\text{g/dL}) \pm 177.460$ and in control group it was $403.71 (\mu\text{g/dL}) \pm 168.765$ (P. value = 0.838).

Mean of transferrin saturation percent \pm SD in case group was $61.08 \% \pm 41.523$ and in control group was $223.23 \% \pm 149.195$ (P.value=0.000).

This study concluded that there is a significant difference in serum iron and transferring saturation percent between Sudanese females newly diagnosed with breast cancer and apparently healthy females.

Statistically, there is no significant difference in serum iron, transferring saturation percent with regard to type of breast cancer, histopathological grade, or menopausal status.

There is significant difference in mean of TIBC according to histopathological grade and there is no significant difference according to type of breast cancer.

المستخلص

اجريت هذه الدراسة التحليلية لقياس حديد المصل والسعة الكلية لارتباط الحديد في النساء السودانيات المصابات حديثا بسرطان الثدي بالمركز القومي للعلاج بالاشعة والطب النووي والنساء السودانيات الاصحاء.

تم اخذ عينات دم من الوريد من 50 من النساء المصابات بسرطان الثدي - المركز القومي للعلاج بالاشعة والطب النووي و 70 من نساء اصحاء من مراكز الرعاية الاولى الصحية - ولاية الخرطوم كعينات ضابطة. تمت مقارنة مجموعة المرضى مع المجموعة الضابطة من حيث العمر وعدد مرات الحمل. تم استخدام الطرق اليدوية (طريقة فيروزين) لقياس كمية الحديد والسعة الكلية للحديد كما تم حساب تركيز الحديد.

حللت نتائج هذه الدراسة بواسطة نظام الحزم الاحصائية للمجتمع (نسخة 22). حيث وجد ان متوسط العمر لدي كل من النساء المصابات بسرطان الثدي هو 47 ± 12.7 سنة و 42 ± 13.0 في العينات الضابطة. متوسط عدد مرات الحمل لدى كل من النساء المصابات بسرطان الثدي والعينات الضابطة هو 4 ± 3.8 مرات.

متوسط حديد المصل 244.30 ± 151.598 مايكروغرام لكل ديسلتر لدى النساء المصابات حديثا بسرطان الثدي و 57.59 ± 43.191 مايكروغرام لكل ديسلتر في العينات الضابطة (القيمة المعنوية 0.000). متوسط السعة الكلية لارتباط الحديد $412.98177.460$ مايكروغرام لكل ديسلتر لدى النساء المصابات حديثا بسرطان الثدي و $403,71 \pm 168.765$ مايكروغرام لكل ديسلتر في العينات الضابطة (القيمة المعنوية 0.838).

متوسط نسبة تشبع الترانسفيرين 61.08 ± 41.523 % لدى النساء المصابات حديثا بسرطان الثدي و 223.23 ± 149.195 % في العينات الضابطة (القيمة المعنوية 0.000).

وقد خلصت الدراسة إلي أن هنالك فرق ذو دلالة معنوية في كمية حديد المصل ونسبة تشبع الترانسفيرين بين النساء السودانيات المصابات حديثا بسرطان الثدي والنساء الاصحاء.

كما انه لا يوجد فرق ذو دلالة معنوية في حديد المصل ونسبة تشبع الترانسفيرين حسب نوع سرطان الثدي ، درجة الانسجة المريضة وسن اليأس . ويوجد فرق في السعة الكلية لارتباط الحديد حسب درجة الانسجة المريضة ولا يوجد فرق حسب نوع سرطان الثدي.

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List of abbreviations

BRCA1	Breast Cancer Associated gene 1
BRCA2	Breast Cancer Associated gene2
DNA	Deoxyribo Nucleic Acid
EMA	Epithelial Membrane Antigen
Fe ⁺³	Ferric iron
µg/dL	Microgram per dislitter
PAS	Periodic Acid Schiff
RICK	Radio Isotope Center Khartoum
SMA	Smooth Muscle Actin
TDLU	Terminal Duct- Lobular Unit
TF	Transferrin
TNM	Tumor lymph Node Metastasis