Sudan University of Science and Technology

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Evaluation of Some Coagulation parameters Among Sudanese women with Breast Cancer- Khartoum state

تقويم بعض معالم التجلط لدي النساء السودانيات المصابات بسرطان الثدي ولاية الخرطوم

A dissertation submitted in partial fulfillment of the requirement of M.Sc degree in Hematology and Immunohematology

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الآية الكريمة

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قال تعالي:

(قُلْ أَرَأَيْتُمْ إِنْ كَانَ مِنْ عِنْدِ اللَّهِ ثُمَّ كَفَرْتُمْ بِهِ مَنْ أَضَلُّ مِمَّنْ هُوَ فِي شِقَاقٍ بَعِيدٍ (52)

سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنْفُسِهِمْ حَتَّى يَتَبَيَّنَ لَهُمْ أَنَّهُ الْحَقُّ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُ عَلَى

كُلِّ شَيْءٍ شَهِيدٌ (53) أَلَا إِنَّهُمْ فِي مِرْيَةٍ مِنْ لِقَاءِ رَبِّهِمْ أَلَا إِنَّهُ بِكُلِّ شَيْءٍ مُحِيطٌ (54))

صدق الله العظيم

سورة فصلت الآيات 52 - 54

Dedication

To my darling parents whose always support me and encourage me to success.

To my wife, children, brothers, sisters for their endless help and motivation.

To my friend, who gave me the possibility of completing this thesis?

To everyone who help me to learn new things and to reach this level.

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Abstract

This is an analytical case control study conducting during the period from March to May 2012 at Radiation and Isotope center in Khartoum. The aim of this study was to evaluate of some coagulation parameters; prothrombin time (PT) activated partial thromboplastin time (APTT), Fibrinogen, and D-dimer in Sudanese women with breast cancer. Seventy women with breast cancer were informed about the study and agreement of participant was obtained. A questionnaire was used to collect data about age, tribe, duration, family history and state. Thirty five healthy participant (control healthy women) were also informed and their blood samples were collected and used as control. Blood samples (5ml) were taken from both patient and control in trisodium citrate anticoagulant containers, then centrifuged the samples to harvest platelets poor plasma for measurement of PT, APTT, Fibrongen and D-dimer by hopistex coagulameter and i-chroma reader. Statistical analysis show that the mean of PT, Fibrongen and D-dimer (14.1 sec), (690 gm/l) and (639 ng/ml) respectively were significantly higher (P.value < 0.05) than the control mean of PT, Fibrongen and D-dimer (12.3 sec) , (270 gm/l) and (202 ng/ml) respectively, and show no statistical difference between APTT in case and control (P.value > 0.05). The study revealed that there is no any significant difference between case and control according to the age and duration of disease. I conducted from this study that woman with breast cancer in high risk of venous thrombosis.

ملخص الدراسة

هذه الدراسة مقطعية وصفية (حالة وحالة ضابطة)، تم إجراؤها في الفترة من مارس 2012 إلي يونيو 2012 بمستشفي الذرة ولاية الخرطوم. وكان الهدف منها تقدير زمن الثرومبين زمن الثرومبوبلاستين الجزئ المنشط وتركيز الفبرينوجين والدي دايمر لدى النساء المصابات بسرطان الثدي وتم ملئ الإستبيان لمعرفة العمر، فترة المرض، التاريخ المرضي للعائلة والسكن. وشملت الدراسة علي 70 من النساء السودانيات المصابات بسرطان الثدي وخمسة ثلاثون عينة من نساء اصحاء كعينة ضبط, اخذت 5مل من الدم الوريدي من كل مشاركة في هذه الدراسة وفي محلول سترات الصوديوم الثلاثية وتم فصل البلازما لإجراء قيم التجلط بإستخدام جهازي (Hopistiex coagulameter, i-chroma reader). وقد تم تحليل النتائج احصائيا بواسطة برنامج الحزم الاحصائية للعلوم الاجتماعية الاصدار 11,5 وكانت النتائج في النساء المصابات نتيجة متوسط زمن البروثرومبين وزمن الثرومبوبلاستين الجزئي المنشط، الفبرينوجين والدي دايمر (14,1 ثانية), (33,1 ثانية) (690 غرام/مل) و (639 نانوغرام/مل) علي التوالي وعند مقارنتها مع مجموعة الضبط (12,3 ثانية) , (32 ثانية) (270 غرام/مل) و (202 نانوغرام/مل) علي التوالي، القيم اعلاه تظهر فروق ذات دلالة احصائية بين النساء المصابات بسرطان الثدي والعينة الضابطة في متوسطات البروثرومبين, الفبرينوجين والدي- ديمر (القيمة المعنوية في جميع الاختبارات اقل من 0,05), بينما لا يوجد فرق ذو دلالة احصائية في متوسط زمن الثرومبوبلاستين الجزئ المنشط. وأوضحت الدراسة انه لا يوجد فروقات بين العمر وفترة المرض. استنتجت من هذه الدراسة ان النساء ذوات سرطان الثدي في خطر التخثر الوريدي.

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List of Abbreviations

No.	Abbreviations	Words of abbreviations
1	PA	Plasminogen activator
2	ADP	Adenosine disulphate
3	PG	Prostaglandin
4	PDGF	Platelets derived growth factor
5	Gp	Glycoprotein
6	ATP	Adenosine triphosphate
7	CD	Cluster differentiation
8	GTP	Guanosine 5triphosphate
9	GDP	Guanosine diphosphate
10	vWF	Von willebrand factor
11	TXA2	Thromboxane A2
12	cAMP	Cyclic adenosine monophosphate
13	HMWK	High molecular weight kininogen
14	KD	Kilo Dalton
15	TF	Tissue factor
16	PT	Prothrombin time
17	TFPI	Tissue factor pathway inhibitor
18	F	Factor
19	TAT	Thrombin_anti thrombin
20	AT	Anti thrombin
21	tPA	Tissue plasminogen activator
22	PA1	Plasminogen activator inhibitor _1
23	TNM	Tumor ,lymph node, metastasis
24	ER	Estrogen receptor
25	PR	Progesterone receptor
26	IBC	Inflammatory breast cancer

27	DCIS	Ductal carcinoma in situ
28	HRT	Hormone replacement therapy
29	DNA	Deoxy nucleic acid
30	BRCA1	Breast cancer type 1
31	CP	Cysteine protease cancer procoagulant
32	IL	Interleukin
33	TM	Thrombomodulin
34	APTT	Activated partial thromboplastin time
35	RICK	Radiation and Isotope Center in Khartoum
36	BJC	British journal of cancer