

الآية

بسم الله الرحمن الرحيم

قال تعالى:

(وَمَا يَعْلَمُ تَأْوِيلَهُ إِلَّا اللَّهُ وَالرَّاسِخُونَ فِي الْعِلْمِ يَقُولُونَ آمَنَّا بِهِ كُلٌّ مِنْ عِنْدِ رَبِّنَا وَمَا يَذَّكَّرُ إِلَّا أُولُو الْأَلْبَابِ).

صدق الله العظيم

آل عمران الآية 7

Dedication

*To my parents, family members, friends and all
who have had positive impacts on my life I
dedicate this research.*

Acknowledgment

First of all, thanks to Allah for giving me the strength to accomplish this work. A special thanks and indebts of gratitude to my supervisor **Prof. BABIKER AHMED MOHAMMED** who guided me all the way though. A great debt of gratitude to Sudan University for science and technology - faculty of medical laboratory science especially to the staff of Hematology department. And thanks a lot to **Dr. ABDALLA MUSA** for greatest efforts with me in this thesis. Thanks also extended to my father, mother, and my all family who supported me. A special thanks also to my lovely husband who supported me very much and encourage me.

Abstract

Venous thromboembolism (VTE) is a disease that includes deep vein thrombosis (DVT) and pulmonary embolism (PE). There are many genetic and acquired risk factors that are known to cause venous thromboembolic disorders (VTE). One of these is Prothrombin 20210G>A gene mutations are the second most frequent hereditary cause of venous thrombosis in Caucasian and less frequency in African.

The aim of this study was to detect the frequency of prothrombin 20210G>A gene mutations among Sudanese venous thromboembolism (VTE) patients. This was case control study in which a total of 80 Sudanese subjects were enrolled in the period between January and November. Among them, 40 apparently healthy Sudanese individuals as controls and 40 patients (20 males and 20 females), age range 20-77 with documented VTE confirmed by Duplex Doppler ultrasound were included.

Results in this study, the mean age of case study group was 38.2, age range of 20-77, mean age of control group was 30.8, age range of 20-52. The variable frequencies of case group under study included: post-operative disease (POD) 30%, hypertension (HTN) 2.5%, pregnancy 35%, diabetes mellitus (DM) 7.5%, contraceptive pills 35%. The prevalence of prothrombin 20210G>A gene mutation among case group was 2 patients (5%) were positive for mutant prothrombin gene (G20210A) and 38 patients (95%) were negative for the prothrombin gene (G20210A) mutation, while there were no positivity for mutation among control group .

Was concluded the prothrombin 20210G>A gene mutation are not associated with VTE in Sudanese patients (p- value 0.152).

مستخلص البحث

يشمل مرض الجلطات الدموية الوريدية (VTE) الخثار الوريدي العميق (DVT) والانصمام الرئوي (PE) ، وهناك العديد من عوامل الخطر الوراثية والمكتسبة المعروفة بأنها تسبب اضطرابات الانسداد التجلطي الوريدي (VTE). واحدة من هذه العوامل هي الطفرة الجينية للبروثرومبين G20210A وهي السبب الثاني الوراثي الأكثر شيوعا في الجنس القوقازي وينتشر بنسبه أقل في الأفارقة. الهدف من هذه الدراسة هو الكشف عن انتشار الطفرة الجينية للبروثرومبين G20210A بين السودانيين المصابين بمرض الجلطات الدموية الوريدية ، هذه الدراسة هي دراسة حالات وفئة ضابطة اجريت على مجموعه تتكون من 80 شخصًا سودانيًا في الفترة ما بين يناير الى نوفمبر. ومن بين هؤلاء ، تم إدراج 40 حالة (20 ذكور و 20 اناث) ، وتراوحت أعمارهم ما بين 20 عاما الى 77 عاما تم تشخيصهم مسبقا بمرض تخثر الاوردة العميقة وكان متوسط عمر مجموعة دراسة الحالة 38.2 ، والفئة العمرية 20-77 . و 40 من الفئة الضابطة يبدو أنهم يتمتعون بصحة جيدة كمجموعة ضبط ومتوسط عمر هذه المجموعة الضابطة 30.8 ، والفئة العمرية 20-52. تضمنت عوامل الخطر لمجموعة الحالات قيد الدراسة: مرض ما بعد الجراحة 30 (POD) % ، وارتفاع ضغط الدم (HTN) 2.5 % ، والحمل 35 % ، وداء السكري 7.5 (DM) % ، وحبوب منع الحمل 35 % . وكان عدد المرضى الذين يحملون الطفرة الجينية للبروثرومبين G20210A بين مجموعة الحالات 2 مرضى (5 %) و 38 مريضا (95 %) لا يحملون الطفرة الجينية للبروثرومبين G20210A ، وبذلك اظهرت هذه الدراسة انه لا توجد علاقة بين الطفرة الجينية للبروثرومبين G20210A ومرض الجلطات الوريديه عند المرضى السودانيين .

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Abbreviation

APC	Activated Protein C
APTT	Activated Partial Thrombin Time
AT	Antithrombin
DM	Diabetes Mellitus
DNA	Deoxy Ribo Nucleic Acid
DVT	Deep Vein Thrombosis
HTN	Hypertension
MRI	Magnetic resonance imaging
MTHFR	MethyleneTetraHydroFolate Reductase
PE	Palmary Embolism
POD	Post-Operative Disease
PT	Prothrombin Time
RBC	Red Blood Cell
VTE	Venous thromboembolism
WBC	White Blood Cell
TFPI	Tissue Factor Pathway Inhibitor

