

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى

قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لَا يَعْلَمُونَ إِنَّمَا يَتَذَكَّرُ  
أُولُو الْأَلْبَابِ

سورة الزمر الآية 9

## **DEDICATION**

To my dear parents,  
To my sisters and brothers,  
To the staff of Sudan university of science and technology  
College of medical laboratory,  
To my colleagues, To the staff of khartoum teaching  
hospital,  
This research without your dedication,  
Assistance and encouragement would not have come into  
existence.

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Praise to God first for enabling me to achieve this research.  
I'm very grateful to my supervisor Dr. Munsoor Mohamed Munsoor, for  
being very keen to make us highly oriented in the field of hematology.  
I'm very grateful to other members in the medical field who help me a lot  
and paved the way for me to progress.

## **Abstract**

This study was conducted at Khartoum Teaching Hospital (Renal dialysis Unit) in the period between 12/2009-2/2010 in order to assess the coagulation mechanism into two clinical groups, acute and chronic renal failure patients. individual recruited for this study include 40 patients (8 acute renal failure and 32 chronic renal failure , of them were 28 males and 12 females) of a mean age of 40.6 years and 14 healthy individuals considered as control. Among those patients, there were 15 hypertensive, 2 diabetics, and 4 Hepatitis C virus. Blood samples were collected from both patients and controls and used for laboratory investigations of activated partial thromboplastin time (aPTT) , prothrombin time (PT) , and platelets count using routine methods. The results of this study showed prolongation of PT and aPTT and a decrease in platelet count compared to the control ,the difference was statistically significant in platelets counts of chronic cases ( $p<0.001$ ). In renal failure that associated with other diseases, the results showed a prolongation in the PT and the aPTT, the prolongation was significant only in patients with hepatitis C ( $p<0.007$ ). The platelet count was significantly decreased in all cases associated with renal failure ( $p< 0.05$ ). The present work concluded the renal failure patients are at high risk of bleeding due to thrombocytopenia ,platelets disfunction . And venous thromboembolism due to loss of antithrombinIII ,factor IX ,XII ,and prekalkrein , and decreased of protein C activity.

## النتائج

اجريت هذه الدراسة بمستشفى الخرطوم التعليمي (وحدة غسيل الكلي) في الفترة ما بين 2009-12/2010م وذلك لتقييم الية تخثر الدم عند مجموعتين من المرضى , مرضى الفشل الكلوي الحاد والمزمن. تم جمع 40 عينه (8 فشل كلوي حاد و 32 فشل كلوي مزمن, وسط هؤلاء 28 ذكر و 12 انثى) في متوسط عمر هو 40.6 سنة و 14 عينه من اصحاء. ضمن المرضى المصابين بالفشل الكلوي يوجد 15 لديهم ارتفاع في ضغط الدم, 2 لديهم مرض السكري, و 4 لديهم التهاب الكبد الوبائي C. خضعت عينات الدم للفحوصات المعملية التالية : زمن الثرومبوبلاستين الموضعي المنشط, زمن الثرومبين , تعداد الصفيحات الدموية , و باستخدام الطرق الروتينيه.

اوضحت نتائج هذه الدراسة عند مرضى الفشل الكلوي ان هنالك زيادة في زمن الثرومبين, والثرومبوبلاستين الموضعي المنشط, ونقصان في عدد الصفيحات الدموية مقارنة بعينات الاصحاء ولكن يوجد فرق ذا دلالة احصائية في تعداد الصفيحات الدموية في الحالات المزمنة ( $p<0.001$ ). في حالة الفشل الكلوي المترافقه مع امراض اخري, نجد زيادة في زمن الثرومبين, وزمن الثرومبوبلاستين الموضعي المنشط, وهذه الزيادة ذا دلالة معنويه عند مرضى التهاب الكبد الوبائي C ( $p<0.007$ ). نقصان عدد الصفيحات الدموية ذا دلالة احصائية في جميع الحالات المترافقه مع الفشل الكلوي ( $p<0.05$ ). من هذه النتائج نستخلص ان مرضي الفشل الكلوي اكثر عرضه للنزيف نتيجة لنقصان واضراب وظائف الصفيحات الدموية . والاصابة بالجلطات الوريدية لنقص مضاد الثرومبين III , عامل التجلط IX, XII, prekalkrein, ونقصان بروتين C .

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## List of abbrevation



|      |                                       |
|------|---------------------------------------|
| PT   | Prothrombin time                      |
| aPTT | Activated partial thromboplastin time |
| INR  | International normalize index         |
| Plts | Platelets                             |
| AT   | Anti thrombin                         |
| FDBs | Fibrin degradative products           |
| CRF  | Chronic renal failure                 |
| ARF  | Acute renal failure                   |

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