



International University of Africa
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**Assessment Relationship Between Uric Acid and
Ferritin in End-Stage Renal Disease Patients Undergoing
Hemodialysis**

A thesis submitted in partial fulfillment for requirements of the
degree of MSc in human physiology

by

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Declaration

I confirm that: This work was done wholly or mainly while in candidature for a research degree at International University of African. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.

Wafa Kamal Ali

Dedication

*At the beginning I dedicate this thesis to
my glory god for guide me to the truth*

and

*to my parents whose love, unselfish support and example over many
years laid the foundation for the discipline and application necessary
to complete this work*

Acknowledgement

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Abstract in Arabic

مقدمة: اظهرت بعض الدراسات الطبية ان حمض اليوريك يخفض حديد الفريتين الي صيغة الحديدوز (حديد

ثنائي التكافؤ) مباشرة، حيث يعمل الفريتين في هذه الحالة كمستقبل للالكترون.

الاهداف: كان الهدف من هذه الدراسة للتحقيق في العلاقة بين حمض اليوريك والفريتين في مرضي الفشل

الكلوي (في المرحلة الاخيرة منه) الذين يخضعون لغسيل الكلي.

الطرق: شارك في هذه دراسة الاستعادية المقطعية حوالي ثلاث وخمسون شخصا من مرضي الفشل الكلوي

(في المرحلة الاخيرة منه) الذين يخضعون لغسيل الكلي (متوسط اعمارهم 46.62 ± 15.6). تم جمع

البيانات باستخدام الاستبيان والفحوص المعملية في الفترة ما بين يناير 2013 الي سبتمبر 2017.

النتائج: اظهر تحليل البيانات ارتفاع مستويات حمض اليوريك في بلازما مرضي الفشل الكلوي (المرحلة

الاخيرة منه) والخاضعين لغسيل الكلي. واطهرت نتائجنا عدم وجود علاقة يعتد بها احصائيا بين حمض

اليوريك والفريتين في هؤلاء المرضى. وايضا نفت نتائجنا وجود علاقة يعتد بها احصائيا بين حمض

اليوريك وكل من مستوي الحديد في الدم ، مقدرة الدم علي حمل الحديد ، كمية تشبع الترانسفيرين بالحديد

مستوي نيتروجين البولينا في الدم والكرياتنين.

الخلاصة: اثبتت نتائجنا ارتفاع عالي في مستوى حمض اليوريك لدي مرضي الفشل الكلوي (المرحلة

الاخيرة منه) والذين يخضعون لغسيل كلى. هذه الدراسة خلصت الي عدم وجود علاقة بين حمض اليوريك

والفريتين في هؤلاء المرضى.

Abstract

Background: Clinical studies have shown that uric acid reduces ferritin iron directly and ferritin acts as an electron acceptor and its iron is reduced to the ferrous state.

Objectives: The objective of this study was to investigate the relationship between uric acid and serum ferritin in end stage renal disease patients undergoing hemodialysis.

Methods: This was retrospective cross sectional study. Fifty three ESRD patients on maintenance hemodialysis (mean age 46.62 ± 15.6 year) were participated in this study. Data were gathered by using questionnaire and laboratory investigations in period between January 2013 to September 2017.

Results: Data analysis showed that a higher levels of plasma uric acid in ESRD patients undergoing hemodialysis. Our results showed that a lack of any significant relationship between uric acid and ferritin in ESRD patients on hemodialysis. However, there was non significant relationship between uric acid with serum iron, TIBC, transferrin saturation, urea and creatinine in ESRD patients on hemodialysis.

Conclusion: Our findings demonstrated that a higher levels of plasma uric acid in ESRD patients undergoing hemodialysis. In addition, our results showed that a lack of any significant relationship between uric acid and ferritin in ESRD patients on hemodialysis.

Symbols and abbreviations

Abbreviation	Means
CKD	Chronic kidney disease
HD	Hemodialysis
CAPD	Continuous Ambulatory Peritoneal Dialysis
ESRD	End- Stage Renal Disease
TIBC	Total Iron Binding Capacity
USRDS	United States Renal Data System
GFR	Glomerular Filtration Rate
BD Vacutainer	Becton Dickinson vacutainer
UIBC	Unsaturated Iron Binding Capacity
TSAT	Transferrin Saturation
SPSS	Statistical Package for the Social Sciences
BUN	Blood Urea Nitrogen

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