

Dedication

*TO THE SOUL OF MY BELOVED FATHER **ELHASSAN**..*

*TO THE SOUL OF MY BELOVED SISTER **SUSAN**..*

*TO MY LOVELY MOTHER **TYSEER**..*

*TO MY GENTLE BROTHER **KAREEM***

*TO MY SISTERS(**NAHID ,NAZOKA , ZOoba ,AFRAH***

WHOM HAVE ALWAYS BEEN THE CANDLES OF MY LIFE

TO ALL OF MY AUNTS ,UNCLES

*TO ALL OF MY FRIENDS (HAFIZ , DR/KAREEM , OSAMA ,MOAWYA ,
ESSAM , GAFFER ,TALAL, AHMED ,WAD AL AMIN , TAGWA,*

*TO EVERYONE SUPPORTED ME UNTIL I FINISHED THIS WORK LET ME
EXPRESS DEEP THANKS TO ALL OF YOU*

Acknowledgement

First of all my prayers and thanks to our Almighty God Most Gracious and Most Merciful..who gave me the serenity, means of strength and patience to finish this work. I deeply indebted to my great and gentle supervisor **Dr/ Abd Allah abd al Kareem Osman** for his valuable , appreciated, help, support, and guidance during this study . I also respect and highly consider his patient assistance and invaluable advices.

My appreciation and thanks are extended to all of the **patients** with renal failure whom, without asking for any return showed and delivered great help to me without hesitation , and I hope to them quick recovery Inshallah, and to all medical staff in **Haemodialysis Unit** and **laboratory Unit** of Khartoum Teaching Hospital.

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Abstract

This study was hospital analytical case control , and it was conducted to determine haematological cells parameter among the adults Sudanese patients with chronic renal failure and whom on long term haemodialysis .

60 patients were informed about the study ,expected out come and agreement of participation were obtained , then the questionnaire was used to collect the information about patients age ,sex ,economical status ,frequency of dialysis ,status of associated iron and or erythropoietin therapy , and history of blood transfusion .

As well 4 ml of blood were taken from the patients pre dialysis in non vacuttanerK3 EDTA anticoagulant and it were used to evaluate cells blood counts , fully automated Sysmex kx21 were used to achieved the complete blood counts.

Computerized statistical package for social sciences version 11.5 were used to determine the samples size, and in subsequent data processing. The mean age of patients having chronic renal failure were 39 years. the results showed that 83.3 % were anemic and only 16.7 5 were normal ,the mean of haemoglobin level, total erythrocyte counts , Packed cell volume ,Mean cell volume , Mean cell haemoglobin , Mean cells haemoglobin concentration ,total White blood cells counts , Platelets counts , and Main platelets volume were , 9.3783 , 3.1617 , 28.2467 , 87.5967 , 29.3467 , 33.1400 , 6.2250 , 179.883 , and 9.6683 Respectively.

For means of haemoglobin value , Red blood cells counts , and packed cells volume there were a higher level of significant variation in compared with control i.e. the significant were 0.000 , 0.000 , 0.000 , for MCV there wasn't significant variation between the patients and control i.e. the significant were 0.457 . for White blood cells there wasn't significant variation because the significant level were 0.308 , and lastly for Platelets count and Mean Platelets volume there was a higher significant level 0.000 , 0.000 3.637 Respectively . In conclusion the cells blood counts and its parameters are extremely Decreased as results of chronic renal failure.

ملخص الاطروحه

هذه دراسته تحليله تعتمد علي المقارنه بين الحاله والمعيار المفترض ، تم اجرائها لتحديد مدي تاثر تعداد الخلايا الدمويه ومعاملاتها المختلفه ، لدي المرضى السودانيين البالغون المصابون بالفشل الكلوي المزمن بمستشفى الخرطوم التعليمي .

تم اخطار ٦٠ مريضاً عن دراسته واغراضها ، وبعد ذلك تم اخذ الموافقه .

بعد ذلك جمعت المعلومات من المرضى بواسطه الاستبيان عن الجنس ، العمر ، الحاله الاقتصاديه ، عدد مرات الغسيل في الاسبوع ، استخدام او عدم استخدام دوائي الاريتروبوليتين و او الحديد ، و حصول او عدم حصول نقل دم ، في ال ٣ شهور الاخير السابقيه لاخذ العينه .

ايضا اخذت من المرضى ٤ مليلتر من الدم قبل الغسيل مباشره في انبويه اختبار تحتوي علي مانع التجلط (EDTA) ، وقد استعملت لتحديد وتقييم تعداد الخلايا الدمويه ومعاملاتها .

تم استخدام جهاز (Sysmex) موديل (kx 21) يعمل اوتوماتكيا لتعداد الخلايا الدمويه ومعاملاتها ، كما تم استخدام برنامج الحزم الاحصائيه للعلوم الاجتماعيه نسخه رقم ١١.٥ لاجراء التحليل الحصائي .

وقد اظهرت نتائج التحليل الحصائي ان متوسط اعمار مرضي الفشل الكلوي المزمن هو ٣٩ سنه ، وايضا اظهرت النتائج ان ٨٣.٣ % من المرضى يعانون من فقر الدم والبقية ١٦.٧ فقط هم اصحاء .

كما وجد ان متوسط تركيز الهيموقلوبين ، تعداد خلايا الدم الحمراء ، متوسط كتله الخلايا ، متوسط حجم الخلايا الحمراء ، متوسط هيموقلوبين الخليه الحمراء ، متوسط تركيز هيموقلوبين الخلايا الحمراء ، متوسط تعداد خلايا الدم البيضاء ، متوسط تعداد الصفائح الدمويه ، ومتوسط حجم الصفائح الدمويه هو 9.3783 ، 3.1617 ، 28.2467 ، 87.5967 ، 29.3467 ، 33.1400 ، 6.2250 ، 179.883 ، 9.6683 علي التوالي . وذلك عند المقارنه بمتوسطات الاشخاص الاصحاء لنفس القيم

كما وجد ان متوسطات قيم الهيموقلوبين ، وتعداد خلايا الدم الحمراء ، ومتوسط كتله الخلايا ، تختلف اختلاف ذي دلالة احصائيه عاليه حيث وجد ان مستوى المعنويه يساوي ٠.٠٠٠ ، ٠.٠٠٠ ، ٠.٠٠٠ علي التوالي . وذلك عند المقارنه بمتوسطات الاشخاص الاصحاء لنفس القيم

اما بالنسبه لمتوسط حجم الخلايا ومتوسط تعداد خلايا الدم البيضاء فلم تكن هنالك اختلاف ذي دلالة احصائيه ومعنويه حيث كان مستوي المعنويه 0.457 ، 0.308 علي التوالي ، وذلك عند المقارنه بمتوسطات الاشخاص الاصحاء لنفس القيم

كما وجد ان متوسط تعداد الصفائح الدمويه ومتوسط احجام الصفائح الدمويه يختلف اختلاف ذي دلالة احصائيه حيث كان مستوي المعنويه 0.000 ، 0.000 علي التوالي ، وذلك عند المقارنه بمتوسطات الاشخاص الاصحاء لنفس القيم ..

خلاصه : وجد ان تعداد ومعاملات الخلايا الدمويه يقل بشده بسبب الاصابه بالفشل الكلوي المزمن .

List of abbreviation

AGM	aorta-gonads-mesonephros
CD(...)	Cluster of differentiation (...)
CFU	Colony forming unit
GEMM	Granulocyte ,erythrocyte ,monocyte ,megakaryocyte
G-CSF	Granulocyte colony stimulating factor
GM-CSF	Granulocyte , monocyte colony stimulating factor
SDF	Stromal derived factor
SCF	Stem cells factor
IL(...)	Inter Luken (...)
TNF	Tumor necrosis factor
Flt-L'	Felt ligands
G-CSF	Granulocyte colony stimulating factor
M-CSF	Monocyte colony stimulating factor
IFN- γ	Interferon gamma
TGF- β	Transforming growth factor beta
RNA	Ribo nucleic acid
EPO	Erythropoietin
SD	Standard deviation
MW	Molecular weight
RBC	Red blood cell
WBC	White blood cell
plt	platelet
CO ₂	Carbon di oxide
Hgb or Hb	haemoglobin
MCV	Mean cell volume
MCH	Mean cell haemoglobin
MCHC	Mean cells haemoglobin concentration
FL	Fimto liter
MPV	Mean platelets volume
CBC	Complete blood counts
RDW	Red cell distribution width
AKI	Acute kidney injury
ARF	Acute renal failure
CKI	Chronic kidney injury
CRD	Chronic renal disease

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