

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الآية

قال تعالى:

{لَا يُكَلِّفُ اللَّهُ نَفْسًا إِلَّا وُسْعَهَا لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا أَكْسَبَتْ رَبِّنَا لَا تُؤَاخِذْنَا إِنَّ نَسِينَا
أَوْ أَخْطَأْنَا رَبِّنَا وَلَا تَحْمِلْنَا إِصْرًا كَمَا حَمَلْنَا عَلَى الَّذِينَ مِنْ قَبْلِنَا رَبِّنَا وَلَا تَحْمِلْنَا مَا لَا
طَاقَةَ لَنَا بِهِ وَاعْفُ عَنَّا وَاغْفِرْ لَنَا وَلَا حَمَنَا أَنْتَ مَوْلَانَا فَانصُرْنَا عَلَى الْقَوْمِ الْكَافِرِينَ}

صدق الله العظيم

سورة البقرة الآية 286

Dedication

To the candle which burns to light my life.....

My Mother

To the one whom I live for making his dreams true..

My Father

To the one who is great source for motivation and inspiration

My Husband

To those have made it possible

My teachers

To whom encourage me

My brothers and friends

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Abstract

This is descriptive cross sectional study which was carried out in Khartoum state. To assess the effect of chronic kidney disease in platelet count and indice. The study includes 75 diagnosed chronic kidney disease patients and 75 age and sex matched healthy individuals as control group, Blood samples were collected and tested for platelet count, mean platelet volume, platelet distribution width, platelet large cell ratio and creatinine level. The study revealed that insignificant difference in platelet count, mean platelet volume, platelet distribution width and platelet large cell ratio in chronic kidney diseases patients($274.01 \pm 102.5 \times 10^9 \text{C/L}$, $9.27 \pm 1.1 \text{fl}$, $11.58 \pm 2.3 \text{fl}$, and $21.07 \pm 8.0\%$ respectively) compare to control group($286.60 \pm 76.5 \times 10^9 \text{C/L}$, $9.56 \pm 0.6 \text{fl}$, $11.85 \pm 1.8 \text{fl}$ and $22.49 \pm 4.7\%$ respectively). There is insignificant different in platelet count ,mean platelet volume ,platelet distribution width and platelet large cell ratio in patients had serum creatinine less than 6mg/dl ($290 \pm 112.1 \times 10^9 \text{C/L}$, $9.37 \pm 1.1 \text{fl}$, $11.6 \pm 2.2 \text{fl}$ and $21.51 \pm 7.7\%$ respectively) compare to patients had serum creatinine more than 6mg/dl ($262.07 \pm 94.5 \times 10^9 \text{C/L}$, $9.20 \pm 1.2 \text{fl}$, $11.56 \pm 2.5 \text{fl}$, $20.76 \pm 8.4\%$ respectively). There is insignificant difference in platelet count ,mean platelet volume ,platelet distribution width and platelet large cell ratio in patients had disease less than 2 years($275.73 \pm 102.7 \times 10^9 \text{C/L}$, $9.32 \pm 1.2 \text{fl}$, $11.55 \pm 2.4 \text{fl}$, $21.32 \pm 8.4\%$ respectively)compare to patients had disease more than 2 years($265.85 \pm 105.6 \times 10^9 \text{C/L}$, $9.07 \pm 0.8 \text{fl}$, $11.77 \pm 2.5 \text{fl}$,and $19.96 \pm 8.5\%$ respectively). There is insignificant difference in platelet count ,mean platelet volume ,platelet distribution width and platelet large cell ratio in patients on hemodialysis($266.80 \pm 100.6 \times 10^9 \text{C/L}$, $9.25 \pm 1.2 \text{fl}$,

11.67 \pm 2.5fl, and 21.00 \pm 8.2% respectively) compare to patients not on hemodialysis($284.83 \pm 106.2 \times 10^9$ C/L, 9.30 \pm 1.1fl, 11.47 \pm 2.2fl, and 21.20 \pm 7.9% respectively). The study concluded there is no effect of chronic kidney disease on platelet count and indices.

ملخص الدراسة

هذه دراسة تحليلية وصفية مقطعة، أجريت في ولاية الخرطوم، لتقدير تأثير مرض الكلى المزمن في عدد الصفائح الدموية ومؤشراتها. وشملت الدراسة 75 مريضاً مشخصاً بمرض الكلى المزمن و75 من الأفراد الأصحاء كمجموعة ضابطة ملائكة للعمر والجنس لمجموعة المرضى، تم جمع عينات الدم واختبارت لعدد الصفائح الدموية، حجم الصفائح الدموية، عرض توزيع الصفائح الدموية، ونسبة الصفائح الدموية للخلية الكبيرة ومستوى الكرياتينين. و كشفت الدراسة أنه لم يكن هناك اختلاف في عدد الصفائح الدموية، حجم الصفائح الدموية، عرض توزيع الصفائح الدموية ونسبة الصفائح الدموية للخلية الكبيرة في مرض الكلى المزمن (0.1 ± 274 ، 102.5×10^9 خلية/لتر ، 1.1 ± 2.27 فمتر، 2.3 ± 11.58 فمتر، $8\% \pm 21.07$) على التوالي مقارنة بالمجموعة الضابطة (0.6 ± 9.56 ، $67.5 \pm 286.60 \times 10^9$ خلية / لتر ، 1.8 ± 11.58 فمتر، $4.7 \pm 22.49\%$) على التوالي. وأوضحت الدراسة أنه لم يكن هناك فرق في عدد الصفائح الدموية، حجم الصفائح الدموية، عرض توزيع الصفائح الدموية ونسبة الصفائح الدموية للخلية الكبيرة في مجموعة المرضى الذين كان لديهم مستوى كرياتينين أقل من 6 مليجرام/ديسلتر ($10^9 \times 112.1 \pm 29$ خلية/لتر ، 1.1 ± 9.37 فمتر، 2.2 ± 11.6 فمتر، $7.7 \pm 21.51\%$ على التوالي) مقارنة بالمرضى الذين لديهم مستوى كرياتينين أعلى من 6 مليجرام/ديسلتر ($10^9 \times 94.5 \pm 262.07$ خلية/لتر، 1.2 ± 9.20 فمتر، 2.5 ± 11.56 فمتر، $8.4 \pm 20.76\%$) على التوالي. وأظهرت الدراسة أنه لم يكن هناك اختلاف في عدد الصفائح الدموية، حجم الصفائح الدموية، عرض توزيع الصفائح الدموية ونسبة الصفائح الدموية للخلية الكبيرة في مجموعة المرضى الذين كان لديهم المرض لمدة أقل من سنتين ($10^9 \times 102.7$ خلية/لتر 1.2 ± 9.3 فمتر، 2.4 ± 11.54 فمتر، $8.4 \pm 21.31\%$ على التوالي مقارنة بالمرضى الذين لديهم المرض لأكثر من سنتين ($10^9 \times 105.6 \pm 265.85$ خلية / لتر ، 0.8 ± 9.06 فمتر، 2.5 ± 11.746 فمتر، $8.5 \pm 19.96\%$ وأشارت الدراسة أنه لم يكن هناك اختلاف في عدد الصفائح الدموية، حجم الصفائح الدموية، عرض توزيع الصفائح الدموية ونسبة الصفائح الدموية للخلية الكبيرة في المرضى الذين يقومون بالغسيل الكلوي الدموي ($10^9 \times 100.6 \pm 266.8$ خلية / لتر 9.25 ± 21.19 فمتر، 2.5 ± 11.65 فمتر، $8.2 \pm 21.00\%$) على التوالي مقارنة بالذين لا يقومون بغسيل كلوي دموي ($10^9 \times 106.2 \pm 284.83$ خلية/لتر ، 1.1 ± 9.30 فمتر 11.4 ± 22.2 فمتر، $7.9 \pm 21.19\%$ على التوالي . في ختام هذه الدراسة وجد أنه لم يكن هناك تأثير لمرض الكلى المزمن في عدد الصفائح الدموية ومؤشراتها.

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Abbreviation

ADP	Adenosine diphosphate
ACEIs	Angiotensin converting enzyme inhibitors
ARBs	Angiotensin II receptor Blockers
ARF	Acute Renal Failure
CKD	Chronic kidney disease
CRD	Chronic renal disease
CRF	Chronic Renal Failure
CMV	Cytomegalo virus
CVD	Cerebrovascular disease
DIC	Disseminated intravascular coagulation
DMSA	Dimercaptosuccinic acid
EDTA	Ethylene diamine tetra acetic acid
ESRD	End stage renal disease
FL	Femto-liter
FGF23	Fibroblast growth factor-23
GFR	Glomerular filtration rate
GP	Glycoprotein

HELLP	Hemolysis, elevated liver enzymes, and low platelets.
HIV	Human immune deficiency virus
HSCs	Haematopoietic stem cells
HUS	Hemolytic-uremic syndrome
IgA	Immunogloulin A
ITP	Immune thrombocytopenic purpura
MAG3	Mercaptoacetyltriglycine
MPV	Mean platelet Volume
MKs	Megakaryocytes
N	Number of sample
NDD-CKD	Non-dialysis dependent CKD
OCS	Open canalicular system
PAF-AH	Platelet activating- acetlyhydroase
PDGF	Platelet-derived growth factor
PDW	Platelet distribution width
PF4	Platelet factor 4
PLCR	Platelet large cell ratio
PLT	Platelet
PON	paraoxonase

PRP	Platelet-rich plasma
RAS	renin-angiotensin system
RBCs	Red blood cells
RRT	Renal replacement therapy
SD	Standard Deviation.
SUST	Sudan university of science and technology
SPSS	Statistical package of social science
TAR	Thrombocytopenia–absent radii
TGF	Tumor growth factor
TPP	Thrombotic thrombocytopenic purpura
VEGF	Vascular endothelial growth factor
vWF	Von willebrand