بسم الله الرحمن الرحيم

: قال تعالى:

(علم الإنسان ما لم يعلم)

صدق الله العظيم
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Without the willing assistance of all these people it would have been difficult to produce this work.
Dedication

To my mother,

father,

brothers,

and sisters.

To my kid Doha and her mother,

To my teachers,

To all those who help me in preparation of this subject.
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Holly Quraan

Acknowledgments

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44 Scatter graph showing increase the Rt. Kidney volume as patients age increases.

44 Scatter graph showing increase in Lt. kidney volume as patients age increases.

45 Scatter graph showing increase Rt. Kidney volume as patient weight increases.

45 Scatter graph showing increase in Lt. kidney volume as patient weight increases.

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<td>ACKDD</td>
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<td>Glomerular filtration rate</td>
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<td>MHz</td>
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<td>Polycystic kidney disease</td>
<td>PCKD</td>
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<td>Peritoneal dialysis</td>
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<td>Renal cell carcinoma</td>
<td>RCC</td>
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<td>Standard deviation</td>
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<td>Statistical Software Package for Social Sciences</td>
<td>SPSS</td>
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Abstract

This study set out to determine renal morphology in patients with chronic renal failure whom had been on haemodialysis, using ultrasound. In this study, 55 patients with CRF and on HD, were studied by ultrasonography which is accepted to be the most suitable noninvasive technique for the estimation of renal morphology. We use ultrasound scanner (Mindray (DP-3300) China), and (2.5-5) MHz sector transducer. This had been done at Kosti Teaching Hospital– Renal Dialysis Center. The kidney length, width and thickness were measured using electronic caliber, and kidney volume was calculated using the formula:

\[
\text{kidney volume} = \text{kidney length} \times \text{kidney width} \times \text{kidney thickness} \times 0.523
\]

Renal shape index was calculated using the formula:

\[
\text{kidney shape index} = \frac{\text{kidney length}}{\text{kidney width} + \text{kidney thickness}}
\]

Of the study group, 58.2% were males and 41.8% were females, their ages were (47.3 ± 16.6) years, weight (52±15.3) kg, and have been on dialysis for (2.8±2.1) years.

This study conclude that, the right kidney found to be more echogenic than the left kidney and the left kidney is more liable to cystic degeneration than the right kidney. In this study, it has been noticed that there is a negative and significant correlation between kidney volume and dialysis duration on both kidneys, and there is positive correlation between the patient age and kidney volume. Our data also showed that kidney volume has positive correlation with patient weight.
The right kidney becomes thinner and narrower while the left kidney becomes wider and thicker as dialysis duration increases

**Summary of the study**

This study was conducted to evaluate the visible kidney shape in patients with chronic kidney disease using dialysis. The study was conducted in the dialysis center at the instructional hospital in Khartoum State, Sudan, to monitor changes in the visible kidney shape. It was related to several variables such as age and duration of treatment. We examined 55 patients using an ultrasound device (Mindray (PD – 3300) China) and (5 – 2.5) MHZ sector transducer.

The study sample included 58.2% males and 41.8% females, with an average age of (47.3 ± 16.6) years and (52 ± 15.3) kilograms. The patients had been on dialysis for an average of (2.8 ± 2.1) years. We measured the length, width, and thickness of each kidney separately, and calculated the kidney volume using the formula: kidney volume = (length × width × thickness) / 2. We calculated the kidney shape index using the formula: kidney shape index = length / (width + thickness) × 15.

The study found that the right kidney becomes thinner and narrower while the left kidney becomes wider and thicker as dialysis duration increases.
تم تحليل البيانات وحساب العلاقات بين المتغيرات باستخدام برنامج Statistical Software Package for Social Sciences (SPSS)

وقد خلصت الدراسة أن الوجات فوق الصوتية من أسهل وأسهل وسائل الفحص لتقييم الشكل الظاهري للكلئ عند مريض فشل الكلئ المزمن لأنها لا تحوي تدخلاً مباشرًا لأجزاء الفحص. وقد أوضحت الدراسة أن الكلئ اليمن أكثر قابلية لعكس الوجات فوق الصوتية مقارنة بالكلئ اليسرى وأن الكلئ اليسرى أكثر قابلية لتكوين الخراجات الناتجة عن عملية الاستصاف الدموي الصناعي مقارنة بالكلئ اليمن. أما حجم الكلئ فأنا حجم الكلئ يتناسب عكساً مع مدة التعرض لعملية الاستصاف الدموي الصناعي وطردياً مع عمر الريض. ودراسة العلاقة بين وزن الريض.

و حجم الكلئ عند هؤلاء المرضى فأنا حجم الكلئ يتناسب طردياً مع وزن الريض. كما أنه كلما زادت مدة تعرض الكلئ للاستصافة الدموي فأن الكلئ اليمن تقل سمكاً وعرضها وتزداد طولاً، أما الكلئ اليسرى فأنها تزداد سمكاً وعرضها وتقل طولاً.