

## **Dedication**

*To my father's soul ...*

*Who work hardly for us.*

*To my mother ...*

*Who taught me*

*How I could be human*

*To my be loved brothers and sisters...*

*To the people whom I love, respect and  
appreciate .....*

**I dedicate this  
research...**

*,,,,,The researcher*

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## Abstract

The present study aims assess the renal functions among those who were exposed to butane gas in small stores in Khartoum state, in period from May to June 2007. A study group of 51 male with age ranging from 22-79 years were selected randomly for this study. A group of 50 healthy male who were not exposed to butane gas were selected randomly as control subject.

Blood samples were taken from all subjects to determine renal function tests (urea, creatinine, uric acid, sodium, potassium, calcium, and phosphorus). The analyses were done in the research laboratory in College of Medical Laboratory Sciences in Sudan University, using spectrophotometer CECIL.CE 1021, and auto analyzer Hitachi 902.

Results of the investigations were analyzed statistically using independent T test and correlation test.

The study illustrated that there was a significant difference mean value of  $\text{Na}^+$ ,  $\text{k}^+$   $\text{Ca}^{++}$ , creatinine ,urea and uric acid between test and control ( $p < 0.01$ ) .But these differences were within reference value.

There was moderately positive correlation between blood urea level and duration of work ( $r=0.5$ ) although there was statistically significant elevation in urea levels but within reference value with work duration maximally 18 years.

## الخلاصة

هذه الدراسة تهدف لتقدير وظائف الكلى لدى بائعين أنابيب الغاز في المخازن الصغيرة بولاية الخرطوم في الفترة من مايو- يونيو 2007. تم اختيار 51 شخص من الذكور تتراوح أعمارهم بين 22-79 سنة، عشوائياً لهذه الدراسة و 50 من الذكور الذين لا يتعرضون للغاز تم اختيارهم كذلك كعينة ضابطة.

تم أخذ عينات دم من المجموعتين لقياس وظائف الكلى (البوليما ، الكرياتينين ، حامض البوليك ، شوارد الصوديوم <sup>+</sup>Na ، شوارد البوتاسيوم <sup>+</sup>K ، شوارد الكالسيوم <sup>++</sup>Ca ، وشوارد الفوسفات <sup>4-</sup>PO<sub>4</sub>). أجريت هذه الفحوصات بمعامل الأبحاث في كلية علوم المختبرات الطبية جامعة السودان باستعمال جهاز المحلول الذاتي Hitachi 902 وجهاز قياس الطيف الضوئي الواسع CECIL.CE 1021. تم تحليل نتائج الفحوصات باستعمال اختبار T المستقل التابع واختبار ارتباط العلاقات .

أوضحت الدراسة أن هناك اختلاف معنوي ذو دلالة إحصائية في متوسطات (البوليما ، الكرياتينين ، حامض البوليك ، شوارد الصوديوم ، البوتاسيوم ، والكالسيوم ) بين فئة الدراسة والفتنة الضابطة بقيمة احتمالية  $< 0.01$  ولكن هذا الاختلاف داخل المدى المرجعي .

أوضحت الدراسة أيضاً أن هناك علاقة إيجابية ذات دلالة إحصائية متوسطة عند فئة الاختبار في مستوى البوليما مع طول فترة سنتين العمل بقيمة  $r = 0.5$  بالرغم من هذه العلاقة الإيجابية بين مستوى البوليما وسنتين العمل نجد هذه الزيادة في المدى المرجعي حتى 18 عام من التعرض للغاز .

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