

# **Dedication**

To .....

My father..... who work hardly for us.

To .....

My mother .....Who taught me  
How I could be human

To .....

My beloved brothers and sisters

To .....

the people whom I love, respect and  
appreciate.

# **Acknowledgements**

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## **Abstract**

The present study aims to assess liver functions among those who sell butane gas cylinders in small stores in Khartoum state, in period from May to June 2007. A study group of 51 males 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 subjects.

Blood samples were taken from all subjects to determine liver function tests (total protein, albumin, bilirubin, aspartate amino transferase, alanine amino transferase, alkaline phosphatase and gamma glutamyl transferase) were done in the research laboratory in College of Medical Laboratory Sciences in Sudan University using both 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 is a significant difference in the mean value of total protein, albumin and aspartate amino transferase between test and control groups ( $p < 0.01$ ), while there is no significant difference in the mean of bilirubin, alanine amino transferase, alkaline phosphatase and gamma glutamyl transferase ( $p < 0.05$ )

There is no correlation between all estimated liver parameters (total protein, albumin, aspartate aminotransferases, bilirubin, alanine amino transferase, alkaline phosphatase and gamma glutamyl transferase) and the duration of exposure to butane gas ( $r = 0.00$ ).

## الخلاصة

هذه الدراسة هدفت لتقييم وظائف الكبد لدي بائعي 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، عشوائيا لهذه الدراسة و 50 من الذكور الأصحاء من نفس العمر والذين لا يتعرضون للغاز تم اختيارهم كذلك كعينة ضابطة.

تم اخذ عينات دم من المجموعتين لقياس وظائف الكبد (البروتين الكلي، الاليومين، المادة الصفراء، انزيم اسبارتيت امينوترانسفيريز AST، انزيم النين امينوترانسفيريز ALT، انزيم الكالين فوسفاتيز ALP و انزيم قاماقلوتاميل ترانسفيريز GGT).

أجريت هذه الفحوصات بمعمل الأبحاث في كلية علوم المختبرات الطبية جامعة السودان باستعمال كل من جهاز المحلل الذاتي Hitachi 902 وجهاز قياس الطيف الضوئي الواسع CECIL.CE 1021.

م تحليل نتائج الفحوصات باستعمال اختبار t المستقل التابع واختبار ارتباط العلاقات . أوضحت الدراسة أن هناك اختلاف معنوي ذو دلالة إحصائية في متوسطات (البروتين الكلي، الاليومين و انزيم اسبارتيت امينوترانسفيريز AST ) بين فئة الدراسة والفئة الضابطة بقيمة احتمالية > 0.01 بينما لا يوجد فرق بين متوسطات انزيم الانين امينوترانسفيريز ALT، إنزيم الكالين فوسفاتيز ALP و انزيم قاماقلوتاميل ترانسفيريز GGT) مع الفترة الكلية أوضحت الدراسة أيضا أنه لا توجد علاقة ذات دلالة إحصائية بين كل اختبارات الكبد التي تم قياسها (البروتين الكلي، الاليومين، المادة الصفراء، انزيم اسبارتيت امينوترانسفيريز AST، انزيم الانين امينوترانسفيريز ALT، إنزيم الكالين فوسفاتيز ALP و انزيم قاماقلوتاميل ترانسفيريز GGT) مع الفترة الكلية للعمل بقيمة (r=0.00).

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