

## **Abstract**

Acknowledgment of importance and functions of the liver makes the clinical assessment of liver disease a crucial task. The main aim of this study is to characterize nonalcoholic fatty liver disease relative to cholesterol level in Sudanese adult people in Khartoum state using Mendray, Madison (Accuvix XG) and General electric ultrasound machine. The data of this study collected from 50 patients using master data sheet in order to predict the associated problems or the potential one as early as possible. This study was carried out in the period from June 2014 to November 2014. The result of this study reveals that there is a direct linear association between the degree of fatty changes and the amount of cholesterol in the blood and liver size. This means the variation on the cholesterol level and liver size can be explain (predicted) by 86.1% and 96.9%, degree of success respectively, using the degree of fatty changes. The degree of fatty changes itself can be predicted by 99.8% using body mass index. Also the result shows that, there is a significant relation between diabetes and liver size, cholesterol level, and body mass index at  $p = 0.05$ .

## ملخص البحث

معرفة أهمية ووظائف الكبد يجعل تقييم العلامات السريرية لأمراض الكبد مهمة جدا. هدف هذه الدراسة وصف العلاقة بين مرض ترسب الدهون في الكبد و كمية الكوليسترول في الدم، في المرضى السودانيين في ولاية الخرطوم عن طريق الموجات فوق الصوتية. تم جمع ٥٠ حالة باستخدام جداول جمع البيانات وذلك للتنبؤ بالمشاكل المحتملة في وقت مبكر. هذه الدراسة أجريت في الفترة ما بين يونيو ٢٠١٤ الى نوفمبر ٢٠١٤. نتائج هذه الدراسة توضح ان هنالك علاقة خطية بين درجات ترسب الدهون في الكبد ونسبة الكوليسترول في الدم وحجم الكبد. هذا يعني ان التغير في كمية الكوليسترول في الدم، حجم الكبد يمكن ان يعبر عنه بنسبة نجاح تساوي ٨٦.١% و ٩٦.٩% على التوالي مقارنة بنسبة ترسب الدهون في الكبد. ونسبة تغير الدهون نفسها يمكن التوصل لها عن طريق معدل السمنة بنسبة ٩٩.٨%. واوجدت الدراسة ايضا ان هنالك علاقة مميزة بين مرض السكر و كل من حجم الكبد، نسبة الكوليسترول في الدم، و معدل السمنة عندما مستوى المعنوية = ٠.٠٥.

# ***Dedication***

*To my family wonderful parents, who have raised me to be the person I am today. They have been with me every step of the way and have been a source of encouragement an inspiration throughout my life.*

*To my kind grandfather and grandmother, who always give me tenderness and love.*

*To my lovely brothers.*

*To my betrothed who always support, encourages, and stands beside me.*

*To my dear friends.*

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## List of Abbreviations:

BMI	Body Mass Index
HDL	High Density Lipoprotein
LDL	Low Density lipoprotein
NAFLD	Non Alcoholic Fatty liver disease
NASH	Non Alcoholic Steato Hepatitis
PV	Portal vein

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