



Sudan University of Sciences and Technology

College of Graduate Studies



Measurement of Normal Liver Span in Adult Sudanese using Ultrasonography

**قياس الامتداد الطبيعي للكبد عند السودانيين البالغين باستخدام الموجات فوق
الصوتية**

A thesis submitted for Partial Fulfillment for the Requirement of M.Sc Degree in
Medical Diagnostic Ultrasound

By

Amgad Ahmed Altraiky Ahmed

Supervisor

Prof. Mohamed Elfadil Mohamed

الآية

قال تعالى:

الَّذِي أَحْسَنَ كُلَّ شَيْءٍ خَلَقَهُ وَبَدَأَ خَلْقَ الْإِنْسَانِ مِنْ طِينٍ ﴿٧﴾ ثُمَّ جَعَلَ نَسْلَهُ مِنْ سُلَالَةٍ مِّنْ مَّاءٍ مَّهِينٍ ﴿٨﴾ ثُمَّ سَوَّاهُ وَنَفَخَ فِيهِ مِنْ رُّوحِهِ وَجَعَلَ لَكُمُ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْئِدَةَ قَلِيلًا مَّا تَشْكُرُونَ ﴿٩﴾

(سورة السجدة، الآيات 7,8,9)

DEDICATION

TO MY MOTHER

TO MY TEACHERS

TO MY BROTHERS

TO MY WIFE AND MY CHILDREN

ACKNOWLEDGEMENT

Researcher extend sincere thanks to the family, specifically, this thanks given to Prof. Mohamed Elfadil who oversaw this research and did not spare the views and effort and time and guidance until noon this research to this image.

And thanked at the first and the end to God.

ABSTRACT

This study is across sectional descriptive study conducted in Military Hospital-Omdurman, and Wad madani Military Hospital from July to October 2019 .The problem of the study was need to determine reference values for normal liver span measurement in adult Sudanese population. The study aimed to measure normal liver span using ultrasonography.

About 70 cases were selected randomly using several ultrasound machines (Esaote machine, Honda HS2000) with curve linear probe 3.5 megahertz.

The patient prepared before scanning to get better visualization of the abdominal organs (fasting at least 8 hours). Good technique and positioning will give clear image of the liver.

The data collected by using clinical data sheets which is designed to include the specific variables.The data was analyzed by using statistic package for social sciences (SPSS), Microsoft Excel and word presented by figures and tables.The study found that liver span means was (12.886±1.089 cm).

Finally, with observe results, we will be sure that the ultrasound is an essential modality and play a great role in the measurement and assessment of the normal measurement of liver span in Sudanese population.

خلاصة البحث

هذه الدراسة هي دراسة وصفية مقطعية أجريت في ولايتي الخرطوم والجزيرة في مستشفى السلاح الطبي - أمدرمان مستشفى ودمدني العسكريين في الفترة من يوليو إلى أكتوبر 2019.

كانت مشكلة الدراسة بحاجة إلى تحديد القيم المرجعية لقياس مدى الكبد الطبيعي في السكان السودانيين البالغين. تهدف الدراسة إلى قياس مدى الكبد الطبيعي باستخدام الموجات فوق الصوتية

تم إختيار 70 عينة عشوائية وتم فحصها بالموجات فوق الصوتية بأجهزة مختلفة (Esaote machine, Honda HS2000) باستخدام مسبار بتردد 3.5 ميغاهيرتز.

لقد تم تحضير المريض قبل إجراء الفحص بالصيام لمدة (8) ساعات ووضحت له طريقة الفحص ليكون أكثر تعاوناً ثم وضع علي طاولة الفحص وهو مستلقياً علي ظهره ليعطي صورة جيدة.

جمعت المعلومات عن طريق ورقة استبيان وقد تضمنت كل المعلومات و المتغيرات المهمة .

حللت المعلومات عن طريق البرنامج الإحصائي للعلوم الاجتماعية , وعرضت علي شكل جداول وأشكال بيانية . وجدت الدراسة أن متوسط طول الكبد كان 1.089 ± 12.886 (سم).

أخيراً, عند معاينة النتائج , نتأكد أن الموجات فوق الصوتية تلعب دوراً مهماً في قياس و تقييم المدى الطبيعي للكبد في السودان.

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ABBREVIATIONS

CT	Computerized Tomography
MRI	Magnetic Resonance Imaging
MPV	Main Portal Vein
IVC	Inferior Vena Cava
RHV	Right Hepatic Vein
RBCs	Red Blood Cells
AST	Aspartate aminotransferase
ALT	Alanine aminotransferases
MHz	Mega Hertz

