

# *Dedication*

To my dear and lovely mother for her encouragement and support. To my father who taught me the first letter. To my brothers and sister. To my dear uncle and aunt. To my husband and lovely children Mohammed, Muzan, Mazin and Mowed

# *Acknowledgment*

Special heartfelt thanks to Dr. Elsafi Ahmed for his sincere teaching during and after the course programmed.

I want to express my sincere thanks and deep gratitude to my faithful supervisor Dr. Mohammed ELfadil for his guidance throughout this thesis and sharing his acknowledgement through the entire study.

Also I am very grateful to my colleagues in ultrasound and CT departments for their help.

I want to thank the staff of pediatric teaching hospital in Gadaref for their help and co-operation.

# Abstract

Visceral leishmaniasis which is known as Kala azar, or black fever, is a chronic infectious disease caused by a protozoan parasite of the genus leishmaniasis, it is transmitted by an insect bite such as fly bite and affects all organs in the body. Therefore, the main objective of this study was to evaluate the impact of Kala azar on the visceral organs.

The study was conducted on Gadaref state; the sample consisted of 144 of Kala azar patients (112 males and 32 females) in the period from October 2010 to February 2011. The data was collected by using ultrasound scanning technique where the patients were scanned in order to evaluate the condition of the liver, gall bladder, spleen and portal vein using B-mode. The data were collected on the following variables: texture, echogenecity and size for all the respective organs. The results of this study showed that; there is a significant difference between the liver, spleen, gall bladder and portal vein from the normal sizes using  $t$ -test at  $p = 0.05$  except for gall bladder thickness where the results were inconclusive. The results also revealed that the predominant texture was the homogeneous one 95.1% while echogenecity showed that 92.4% of the cases had hyper echoic appearance.

## الملخص العربي

الحمى السوداء المسمّاة علمياً كلاًزار أو (ليشمانيا) هي مرض معدٍ مزمن يتسبب بواسطة طفيليات الليشمانيا تعرف بالبروتوزو و التي تنتقل بواسطة عضّة الحشرات كالذباب و تغزو هذه الطفيليات كل أعضاء الجسم. هدفت هذه الدراسة الى تقييم أثر الحمى السوداء على الأعضاء الإحشائية مثل الكبد، الطوخال، الصفراء والوريد البابي.

أجريت هذه الدراسة بولاية القصارف على عينة من المرضى تتكون من ١٤٤ مريض منهم ١١٢ ذكر و ٣٢ أنثى في الفترة ما بين أكتوبر ٢٠١٠ و فبراير ٢٠١١. تم جمع البيانات بواسطة تقنية الموجات الصوتية مع استخدام نموذج التباين الصوتي B-mode لكل من نوعية النسيج، إبتعاثية الصدى الصوتي Echogenecity و الحجم لكل من الأعضاء أعلاه. أوضحت الدراسة إن هناك فرق معنوي بين كل من حجم الكبد، الطوخال، الحوصلة الصفراء والوريد البابي مقارنة بالحجم الطبيعي بواسطة إختبار "ت" و عند درجة معنوية قدرها ٠.٠٥. كما أوضحت الدراسة ان نوعية النسيج السائد هي المتجانس بنسبة ٩٥.١% بينما إبتعاثية الصدى الصوتي الزائد كانت بنسبة ٩٢.٤%.

<b>List of contents</b>	<b>Page</b>
Dedication	I
Acknowledgment	II
Abstract (English)	III
Abstract (Arabic)	IV
List of content	V
List of abbreviations	VII
Chapter one (Introduction)	1
1-1 Diagnosis	2
1-2 Problem of the study	4
1-3 Objective of the study	4
1-4 Significance of study	5
1-5 Over view of study	6
Chapter two(literature review)	7
2-1 The liver	7
2-1- 1 Anatomy	7
2-1-2 Histology	8
2-1-3 Blood supply	9
2-3-4 Function of the liver	10
2-3-5 Pathology of the liver	11
2-2 The gallbladder	20
2-2-1 Histology	21
2-2-2 Function	21
2-2-3 Emptying of the gallbladder	21
2-3-1 The spleen	22
2-3-2 Pathology of the spleen	25
2-4 Normal Sonographic characteristic	30
Chapter three (Methodology)	34
3-1 Material	34
3-2 Method of data collection	37
Chapter four	37
Result	38
Chapter five	50
5-1 Dissection	50
5-2 Conclusion	53

5-3	Recommendation	54
	References	55
	Appendix (A/5)	56
	Appendix(B/5)	64

## List of Abbreviation

GB	Gallbladder
HIV	Human immune deficiency virus
IVC	Inferior vena cava
LD	Leishmania donovani
PV	Portal vein
SPSS	Statistically package for social science
US	Ultrasound
VL	Visceral leishmaniasis