

## الآية

قال تعالى:

" يَرْفَعُ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا  
الْعِلْمَ دَرَجَاتٍ "

صدق الله العظيم

( سورة المجادلة (آية:11)



**This work is dedicated to all  
these  
candles that glowed up to  
lighten my way**

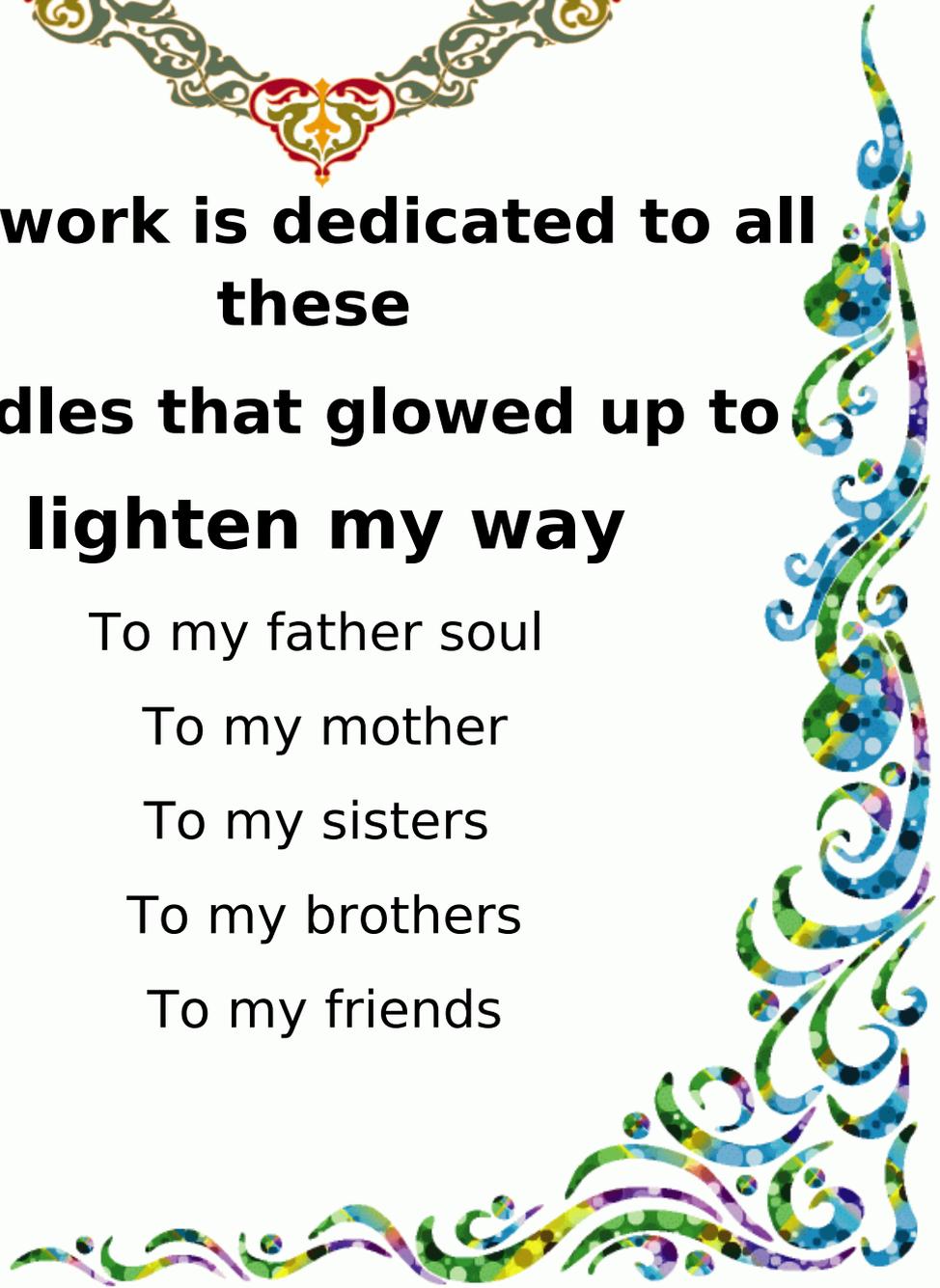
To my father soul

To my mother

To my sisters

To my brothers

To my friends





## **ACKNOWLEDGMENT**

**My heartfelt gratitude to my supervisor Dr. Elsafi Ahmed Abd A Ilaa Albadawi for his encouragement, guidance and support helped me greatly in the understanding and writing this research.**

**I am greatly appreciative of the Suba hospital & Al Alshab hospital where took part in my study, yielding high response.**

## الخلاصة

هذا البحث عبارة عن دراسة مرجعية الهدف منها معرفة المسببات الظاهرية لحالة الاستسقاء الدماغى جمعت من 50 حالة طفل حديثى الولادة ورُضع لديهم حالات استسقاء دماغى ولديهم ملفات بمستشفى الشعب و مستشفى سوبا الجامعى وتقارير موجات صوتية للدماغ أُجريت لهم خارج او داخل المستشفى جمعت هذه البيانات بصورة عشوائية من قسم الاحصاء و الارشيف بالمستشفيات باستخدام اوراق تجميعية وقد حُللت وكانت النتائج كالاتى :

اعراض حالات الاستسقاء الدماغى تمثلت فى نسبة 80%. حالات الولادة القيصرية لمرضى الاستسقاء الدماغى ماثت نسبة 60% , حالات الاستسقاء الدماغى الخلقية مثلت النوع الاكثر شيوعا بنسبة 68% والمكتسبة مثلت نسبة 32%. تضخم البطينات الجانبية هو السائد بنسبة 100% , حالات الاستسقاء الدماغى المتصلة مثلت نسبة 60% وغير المتصل نسبة 40%, تضيق القناة الجروية تمثل نسبة 68% ونقص تكوين ارنولد شيارى الثانى بنسبة 24% من نوع الاستسقاء الدماغى الخلقى , حالات ما بعد التهاب السحايا مثلت نسبة 100% من نوع حالات الاستسقاء الدماغى المكتسبة تكيسات السحائى النخاعية مثلت نسبة 36% من كل الحالات .

## **Abstract**

This a longitudinal Retrospective study conducted in Khartoum for cranial ultrasound finding in hydrocephalus Sudanese neonate and infant the study was done cross 50 neonate and infant with hydrocephalic presented to Alshaab & Souba hospital as hydrocephalic some of patient had been diagnosed in Alshaab Hospital and the other were in Souba teaching hospital . The Data was collected from archive and statistic department in both hospitals by using master collection sheet within period 2011 and 2012 . The study showed that;

Symptomatic clinical condition with hydrocephalus is 80%, Delivery mode of hydrocephalus patients with Cesarean section present 60%,Congenital hydrocephalus finding present 68% more common than acquired 32%,hydrocephalus associated with Lateral ventricle is 100%,communicating hydrocephalus present 60% while non communicating present 40%,In congenital hydrocephalus Aqueduct is most finding 28% and 24% Arnold chirri II malformation,Post meningitis is prominent acquired causes of acquired hydrocephalus present 100%. Myelomingocele association with are 36% in all cases.

## List of Tables

Table No.	Title	Page No.
(4-1)	Lateral ventricle enlargement	43
(4-2)	3 <sup>rd</sup> ventricle enlargement	43
(4-3)	4 <sup>th</sup> ventricle enlargement	44
(4-4)	Type of hydrocephalus	44
(4-5)	description of hydrocephalus	45
(4-6)	Associated findings with myelomeningocele Cross tabulation	47

## List of Figures

Figure No.	Title	Page No.
(2-1)	Shows Skull Anatomy	5
(2-2)	Shows Meninges Anatomy	6
(2-3)	Shows Cerebrospinal Fluid	7
(2-4)	show ventricular system	7
(2-5)	show Major Regions of the Brain	9
(2-6)	Major cerebral arteries and the circle of Willis.	10
(2-7)	show brain development with age	12
(2-8)	show view of neonate skull	13
(2-9)	show neonatal ultrasonography	14
(2-10)	show the acoustic windows	17
(2-11)	show standard six coronal plane	18
(2-12)	show <b>a</b> Fourth coronal plane (C4) . <b>b</b> Ultrasound scan of the fourth coronal plane (C4)	18
(2-13)	show <b>a</b> Third coronal plane (C3). <b>b</b> Ultrasound scan of the third coronal plane (C3)	19
(2-14)	Show <b>a</b> Second coronal plane (C2). <b>b</b> Ultrasound scan of the second coronal plane (C2)	19
(2-15)	show <b>a</b> First coronal plane (C1). <b>b</b> Ultrasound scan of the first coronal plane (C1)	20
(2-16)	show <b>a</b> Fifth coronal plane (C5). <b>b</b> Ultrasound scan of the fifth coronal plane (C5)	21
(2-17)	show <b>a</b> Sixth coronal plane (C6). <b>b</b> Ultrasound scan of the sixth coronal plane (C6)	21
(2-18)	show Standard five (5) coronal planes Begin with the transducer perpendicular at the anterior fontanelle	22

(2-19)	show <b>a</b> Midsagittal plane (S3). <b>b</b> Ultrasound scan of the midsagittal plane (S3)	23
(2-20)	20 show <b>a</b> Second and fourth parasagittal planes (S2, S4). <b>b</b> Ultrasound scan of the fourth parasagittal planes (S4)	24
(2-21)	show <b>a</b> First and fifth parasagittal planes (S1, S5). <b>b</b> Ultrasound scan of the first parasagittal planes (S1)	25
(2-22)	show hydrocephalus enlargement of head	26
(2-23)	Show ultrasound pattern of hydrocephalus	35
(4-1)	show distribution of age of children	39
(4-2)	show gender distribution of children	40
(4-3)	show clinical condition of cases	41
(4-4)	show mode of delivery	42
(4-5)	show associated findings	45
(4-6)	show association with myelomeningocele	46

## **List of abbreviations**

CUS: Cranial ultrasonography

CNS: central nervous system

PNS: peripheral nervous system

AF: anterior fontanelle

NTD: neural tube defect

CSF: cerebrospinal fluid

HC: hydrocephalus

CPP: Choroid plexus papilloma

ETV: endoscopic third ventriculostomy

CS: cesarean section

CT: computerized tomography

US: ultrasound

ICP: intracranial pressure

MRI: magnetic resonance Image

## **Contents**

