

ULTRASOUND FINDINGS AS A SCREENING METHOD FOR CASES ADMITTED IN THE NEONATAL INTENSIVE CARE UNIT

Thesis

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Abstract

Sonography of the brain is an integral part of care in the neonate, particularly among high-risk premature infants. Current ultrasound technology allows for rapid evaluation of infants in the intensive care nursery with virtually no risk. The advantages of sonography over CT or MRI include portability, lower cost, speed, lack of ionizing radiation and no need for sedation.

KEY WORDS

**ULTRASOUND FINDINGS
SCREENING METHOD
FOR CASES ADMITTED**

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Abbreviations

AGA	Appropriate for gestational age
AF	Anterior fontanelle
AVM	Arteriovenous malformation
BPD	Bronchopulmonary dysplasia
CBC	Complete blood count
CBR	Cerebral blood flow
CRP	c-reactive protein
CSF	Cerebrospinal fluid
DIC	Disseminated intravascular coagulopathy
ECMO	Extracorporeal membrane oxygenation
GA	Gestational age
GMH	Germinal matrix hemorrhage
HIE	Hypoxic ischemic encephalopathy
IPH	Intraparenchymal hemorrhage
IUGR	Intrauterine growth retardation
IVH	Intra ventricular hemorrhage
LMP	Last menstrual period
MF	Mastoid fontanelle
MCA	Middle cerebral artery
MCK	Multicystic kidney
NAIT	Neonatal alloimmune thrombocytopenia
NEC	Necrotizing enterocolitis
NICU	Neonatal intensive care unit
OL	Oligodendroglia
PCK	Polycystic kidney
PDA	Patent ductus arteriosus
PMA	Postmenstrual age
PF	Posterior fontanelle
PROM	Premature rupture of membranes
PVH	Periventricular hemorrhage
PVL	Periventricular leukomalacia
RDS	Respiratory distress syndrome
RHD	Rheumatic heart disease

SGA	Small for gestational age
TSB	Total serum bilirubin
US	Ultrasound
VGAM	Vein of Galen anurysmal malformation
VLBW	Very low birth weight
VM	Ventriculomegaly
UPJO	Uretro pelivc junction obstruction
WM	White matter

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Introduction

Ultrasound is the most available and easily repeatable technique for imaging of the neonate. Its quality and diagnostic accuracy depends on several factors; the suitability of the ultrasound machine for neonatal work, the use of optimal settings and probes, appropriate scanning protocols, the use of a variety of acoustic windows and last but not least, the scanning experience of the examiner. Knowledge of normal anatomy and the echogenicities of different tissues in normal and pathological situations as well as familiarity with the physiological and pathological processes likely to be encountered are vital (***Leijser et al., 2006***).

Abdominal ultrasound is a very useful tool for detecting abdominal masses, congenital anomalies as well as abnormalities in the gastrointestinal or urinary system. It is particularly useful in cases of persistence of neonatal jaundice beyond 2 weeks of age to differentiate between the three most common causes: hepatitis, biliary atresia, and choledochal cyst. US is useful as well for demonstrating inspissated bile and biliary duct stones (***Gubernick et al., 2000***).

Cranial ultrasonography can be also of great help as a bed side screen for neonatal intracranial ischemia and hemorrhage (*Boal et al., 1995*).

Cerebral hemorrhage and its different patterns whether intraventricular or periventricular hemorrhagic infarction can be detected by ultrasound. Complications like periventricular leucomalacia and its different stages can be also elicited.

The importance of repeating the US examinations until near term is highlighted (*Veyrac et al., 2006*).

Cranial Sonography, although the most commonly used imaging technique in neonates, is less sensitive and less specific for the detection of intracranial ischemia (*Blankenberg et al., 2000*).

Aim of the Work

The aim of this study is to screen most of babies admitted to NICU within certain period (6 months) for neonatal abnormalities using U/S: cranial and abdominal.