Outcome of Ductal Plate Malformations in a Cohort of Egyptian Infants and Children

Thesis

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in Pediatrics

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وأنزل الله عليك
الكتاب والحكمة
وعلَّمَكَ مَا لَمْ تَكُن
تَعْلَمُ وكَانَ فَضْلُ
اللَّهِ عَلَيْكَ عَظِيماً
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Ebtesam Mosad Ali Farag

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List of Abbreviations

ADPKD	**:** Autosomal dominant polycystic kidney disease
ADPLD	**:** Autosomal dominant polycystic liver disease
ALP	**:** Alkaline phosphatase
ALT	**:** Alanine aminotransferase
ARPKD	**:** Autosomal recessive polycystic kidney disease
AST	**:** Aspartate aminotransferase
BBS	**:** Bardet-Biedl syndrome
BUN	**:** Blood urea nitrogen
CBD	**:** Common bile duct
CD	**:** Caroli's disease
CED	**:** Cranioectodermal dysplasia
CHF	**:** Congenital hepatic fibrosis
CMV	**:** Cytomegalovirus
CNS	**:** Central nervous system
COACH	**:** Cerebellar vermis hypoplasia, oligophrenia, congenital ataxia, coloboma and congenital hepatic fibrosis
CT	**:** Computed tomography
DPM	**:** Ductal plate malformation
EBV	**:** Epstein bare virus
ECHO	**:** Echocardiography
ESR	**:** Erythrocyte sedimentation rate
ESRD	**:** End stage renal disease
EVC	**:** Ellis-van Creveld syndrome
GGT	**:** Gamma-glutamyl transpeptidase
HG	**:** Hemoglobin
IQR	**:** Interquartile range
IVP	**:** Intravenous pyleography
JATD	**:** Jeune asphyxiating thoracic dystrophy
JSRDS	**:** Joubert syndrome and related disorders

List of Abbreviations *(Cont...)*

MCL	**:** Midclavicular line
MCV	**:** Mean corpuscular volume
ML	**:** Midline
MRCP	**:** Cholangiopancreatography
MRI	**:** Magnetic resonance (MR) imaging
MTS	**:** Molar tooth sign
NF1	**:** Neurofibromatosis 1
NPHP	**:** Nephronophithisis
OFD1	**:** Oral–facial–digital syndromes.
PBC	**:** Primary biliary cirrhosis
PH	**:** Portal hypertension
PKD	**:** Polycystic kidney disease
PKHD1	**:** Polycystic kidney hepatic disease 1 gene
PLD	**:** Polycyctic liver disease
PLS	**:** Papillon Lefevre syndrome
PSC	**:** Primary sclerosing cholangitis
RBCs	**:** Red blood cells
RHPD	**:** Renal-hepatic-pancreatic dysplasia
VMC	**:** von Meyenburg complex
WBCS	**:** White blood cells

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Introduction

Congenital hepatic fibrosis (CHF) is a rare congenital multisystem disorder mostly inherited in an autosomal recessive fashion ***(Akahan et al., 2007)***. This term was first coined by Dr. Kerr DN in 1961 ***(Kerr et al., 1961)***.

CHF belongs to the family of fibropolycystic liver diseases which includes a spectrum of disorders (choledochal cyst, Caroli's disease, Caroli's syndrome, autosomal dominant polycystic liver disease (ADPLD), and biliary hamartoma) that are usually found in combination with each other and are usually inherited ***(Yonem and Bayraktar, 2007).***

The main underlying process of the disease is the malformation of the ductal plate (the embryological precursor of the biliary system), secondary biliary strictures and periportal fibrosis ultimately leading to portal hypertension. The natural course of the disease is highly variable ranging from minimally symptomatic disease to true cirrhosis of the liver however. In most patients the most common manifestations of the disease are those related to portal hypertension (bleeding varices, splenomegaly) and hepatomegaly ***(Akhan et al., 2007).***

CHF may occur as an isolated condition or as a part of other syndrome like COACH syndrome (cerebellar vermis hypoplasia, oligophrenia, congenital ataxia, coloboma and congenital hepatic fibrosis), Meckel syndrome (renal cystic dysplasia, central nervous system malformation, polydactyly, hepatic development defect and pulmonary hypoplasia) ***(Brancati et al., 2009)*** and also Caroli syndrome (congenital cystic dilatation of the biliary system and CHF) ***(Bayraktar et al., 2010).***

The association of CHF with autosomal recessive polycystic kidney disease (ARPKD) is well known and occurs in approximately 50% of cases. However the association with autosomal dominant polycystic kidney disease (ADPKD) is less well known and less well documented ***(Kanaheswari et al., 2008).***

Other diseases associated with CHF include: Bardet-Biedl syndrome (pigmentosa, retinitis, obesity, polydactyly, mental retardation and renal failure) ***(Badano et al., 2006),*** Papillon Lefevre syndrome (palmar-planter hyperkeratosis, periodontitis and premature loss of dentition) **(Genc et al., 2007).** Von Recklinghausens syndrome (café' au lait spots and Lisch nodules) ***(Jorge et al., 2006).***

Aim of the Work

The aim of this study is to investigate for phenotypes and syndromes of CHF in a cohort of Egyptian infants and children.