

EPIDEMIOLOGY AND MANAGEMENT
OF CHRONIC KIDNEY DISEASE
IN THE PEDIATRIC DIALYSIS UNIT
AT AIN SHAMS UNIVERSITY
THROUGH 20 YEARS
(1991 – 2011)

Thesis submitted for partial fulfillment of
Master degree in Pediatrics

By

Ahmed Mahmoud AbdelFattah AbdAllah

M.B.; B.Ch.

Ain Shams University, 2008

UNDER SUPERVISION OF

Dr. Farida Ahmed Farid

Professor of Pediatrics

Faculty of Medicine, Ain Shams University

Dr. Ihab Zaki El-Hakim

Professor of Pediatrics

Faculty of Medicine, Ain Shams University

Dr. Sahar Mohamed Sabbour

Professor of Epidemiology and Public Health

Faculty of Medicine, Ain Shams University

2012

فَالْحَمْدُ لِلَّهِ



FOREWORD AND ACKNOWLEDGEMENTS

First and foremost, I would like to express my deepest appreciation to Dr. Farida Ahmed Farid, Professor of Pediatrics at Ain Shams University and founder of the Pediatric Nephrology and Dialysis unit, for being a pioneer on the path that we all aspire to follow.

I also wish to express sincere appreciation to Dr. Ihab Zaki El-Hakim, Professor of Pediatrics and head of the Pediatric Dialysis unit at Ain Shams University, for his help, stimulating suggestions, and for generously sharing his knowledge and experience throughout this study.

I am deeply indebted to Dr. Sahar Mohamed Sabbour, Professor of Epidemiology and Public Health at Ain Shams University, for her enthusiasm, generous assistance and invaluable advice.

My sincere thanks go to the medical and nursing staff at the Ain Shams University Pediatric Dialysis unit, for their exemplary service and dedication to the patients' well-being, without which this study would have never been possible.

My work would never have been completed without the vast reserve of patience, encouragement and devotion of my family, to whom I owe an endless debt of gratitude.



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Abbreviations

CAKUT	Congenital Anomalies of the Kidneys and Urinary Tract
CAPD	Continuous Ambulatory Peritoneal Dialysis
CCPD	Continuous Cycling Peritoneal Dialysis
CDSS	Clinical Decision Support System
CIPD	Continuous Intermittent Peritoneal Dialysis
CKD	Chronic Kidney Disease
CPOE	Computerized Physician Order Entry
CRF	Chronic Renal Failure
CVD	Cardiovascular Disease
EHR	Electronic Health Records
ESA	Erythrocyte-Stimulating Agent
ESRD	End-Stage Renal Disease
GFR	Glomerular Filtration Rate
GN	Glomerulonephritis
HD	Hemodialysis
HIE	Health Information Exchange
HUS	Hemolytic-Uremic Syndrome
PD	Peritoneal Dialysis
RRT	Renal Replacement Therapy
SLE	Systemic Lupus Erythematosus
TTP	Thrombotic Thrombocytopenic Purpura

Introduction

Chronic kidney disease (CKD) and renal failure (RF) have been recognized as significant medical problems for most of the last 2 centuries and, until relatively recently, were uniformly fatal. Scientific and technologic improvements during the second half of the 20th century provided renal replacement therapy (RRT) as a life-sustaining option for many individuals who otherwise may have died. The impact of these medical advancements has been remarkable **(Gulati, 2011)**.

Chronic Renal Failure (CRF) is relatively rare in children. Continuing progress in RRT has led to an improved prognosis of this condition, which continues to be a burden for the young patient, his family and society. In order to update RRT programmes, it is important to regularly collect basic demographic data on CRF **(Deleau et al., 1994)**.

Pediatric End-Stage Renal Disease (ESRD) patients pose unique challenges to providers and the healthcare system, which must address not only the disease itself, but the many extra-renal manifestations that affect patients' lives and families **(USRDS, 2010)**.

Globally, the prevalence of CKD stage II or lower in children is reported to be approximately 18.5-58.3 per million children. Disease prevalence is much lower than that in adults **(Gulati et al., 1999)**.

Epidemiological information on the incidence and prevalence of pediatric CKD is currently limited, imprecise, and flawed by methodological differences between the various data sources. There are distinct geographic differences in the reported causes of CKD in children, in part due to environmental, racial, genetic, and cultural (consanguinity) differences. However, a substantial percentage of children develop CKD early in life, with congenital renal disorders such as obstructive uropathy and aplasia / hypoplasia / dysplasia being responsible for almost one half of all cases **(Warady et al., 2007)**.

With the increasing knowledge about the mechanism and risk factors in the progression of chronic renal disease, the management of pre-end stage renal failure has become a challenge and an art. It is during this stage of the disease that the patient specifically needs