Effect of HCV infection on graft Outcome in renal transplant recipients

Thesis
Submitted for partial fulfillment Of Master degree
in Internal Medicine

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2013

Acknowledgement

*First thanks to **ALLAH** to whom I relate any success in achieving any work in my life.*

*I wish to express my deepest thanks, gratitude and appreciation to **Prof. Dr. Adel Mohammed AFIFI,** Professor of Internal Medicine and Nephrology, Faculty of Medicine-Ain Shams University for his meticulous supervision, for his kind guidance, valuable instructions and generous help.*

*Special thanks are due to **Dr. Emam Abd El latif Waked,** professor of internal medicine and nephrology, Theodor Bilharz Research Institute for his sincere efforts, fruitful encouragement.*

*I am deeply thankful to **Dr. Ahmed Shaban Badawy** lecturer of Internal Medicine and Nephrology Faculty of Medicine- Ain Shams University for his great help, outstanding support, active participation and guidance.*

*My deepest thanks are also to **Prof. Dr. Essam Khedr** Professor of Internal Medicine and Nephrology, Faculty of Medicine- Ain Shams University and all medical staff department of nephrology, Naser Institute for their kind help during the practical part of the work.*

Lastly, I want to thank all my staff, my colleagues and my patients without their help this work could not have been completed, special thanks to my family, my wife, my son Hassan.

Anas Hassan

List of Contents

List of Tables

List of Figures

List of Abbreviations

ADA	American Diabetic Association
AIDS	Acquired immunodeficiency syndrome
ALG	Antilymphocyte Globulin
ALT	Alanine Transaminase
AST	Aspartate Aminotransferase
ATN	Acute Tubular Necrosis
AZA	Azathioprine
BMI	Body Mass Index
BUN	Blood urea nitrogen
C	Complement
CAI	Chronic Allograft Injury
CBC	Complete Blood Count
CD	Cluster of Differentiation
CKD	Chronic kidney disease
CMV	Cytomegalovirus
CNI	Calcineurin Inhibitor
CRP	C-reactive protien
CsA	Cyclosporine A
DGF	Delayed Graft Function
DM	Diabetes Mellitus
DPP IV	Dipeptidyl peptidase IV
EBV	Epstien barr virus
EIA	Enzyme immunoassay

ESRD	End stage renal disease
FSGS	Focal Segmental Glomerulosclerosis
GFR	Glomerular Filtration Rate
GLP	Glucagon like peptide
GN	Glomerulonephritis
HD	Hemodialysis
HAART	Highly active antiretroviral therapy
HBV	Hepatitis B Virus
H C V	Hepatitis C Virus
HHV6	Human herpes virus 6
HHV7	Human herpes virus 7
HHV8	Human herpes virus 8
HIV	Human immunodeficiency virus
HLA	Human Leukocyte Antigen
HMPV	Human metapneumonia virus
HSV	Herpes simplex virus
HTLV-1	Human t lymphotropic virus -1
HTN	Hypertension
HUS	Hemolytic Uremic Syndrome
IFG	Impaired fasting glucose
Ig	Immunoglobulin
IGT	Impaired glucose tolerance
IL-8	Interleukin-8
INFα	Interferon alpha

KDIGO	Kidney Disease: Improving Global Outcomes
KDOQI	Kidney Disease Outcomes Quality Initiative
KS	Kaposi sarcoma
LCM	Laser capture microdissection
LDH	Lactic dehydrogenase
MALT	Mucosa associated lymphoma tumors
MMF	Mycophenolate Mofetil
MPGN	Membranoproliferative GN
mTOR	Mammalian Target of Rapamycin
MU	Million units
NIH	National institutes of health
NKF	National Kidney Foundation
NODM	New onset diabetis mellitus
OKT3	Orthoclone (muromonab-CD3) (anti–T-cell antibody)
PCR	Polymerase Chain Reaction
PKD	Polycystic kidney Disease
PLT	Platelets
PPD	Purified protein derivative
PTDM	Post Transplantation Diabetes Mellitus
PTLD	Post transplantation lympho- proliferative disorders
RIBA	Recombinant immunoblot assay
RPR	Rapid plasma reagent
RRT	Renal replacement therapy

RSV	Respiratory syncytial virus
SLE	Systemic lupus Erythematosus
SRL	Sirolimus
SVR	Sustained virological response
TAH	Transplant associated hyperglycemia
TMA	Thrombotic Microangiopathy
TNFα	Tumor necrosis factor alpha
TZDs	Thiazolidinediones
USRDS	United states renal data system
VCAM-1	Vascular cell adhesion molecule-1
VZV	Varicella zoster virus
WBCs	White Blood Cells
WHO	World Health Organization.
WNV	West Nile virus

Introduction

Renal transplantation is one of the spectacular success stories in medicine during the 20th century. In fact, the advances in renal transplantation have advanced this modality to be the treatment of choice for end stage renal disease (ESRD) **(Doyle et al., 2004).**

Hemodialysis patients represent a high-risk group for hepatitis C virus (HCV) infection, possibly due to direct or indirect exposure to contaminated blood, beside the fact that HCV infection itself may be transmitted through transplantation **(Morales et al., 2004).**

HCV infection is not only a clinical problem in kidney transplant patients but also a cause of renal disease and vasculitis **(Bruchfeld, 2003).**

HCV is currently the main cause of chronic liver disease in such population. This is one of causes of death in long term renal transplant survivors **(Gheith, 2011).**

Aim of the Work

- To study the effect of HCV infection on graft function and survival in renal transplant recipients.

CHAPTER 1

Renal Transplantation

Introduction:

The definition of chronic kidney disease (CKD) has been simplified over the last 5 years. It is now defined as the presence of kidney damage for a period greater than 3 months. An estimated or measured glomerular filtration rate (GFR) of less than 60 ml/min/1.73 m2 is considered abnormal for all adults. A rate of more than 60 ml/min/1.73 m2 is considered abnormal if it is accompanied by abnormalities of urine sediment or abnormal results of imaging tests, or if the patient has had a kidney biopsy with documented abnormalities. As the reporting of estimated GFR has become more common, the relatively high prevalence of impaired kidney function (i.e., estimated GFR < 60 ml/min/1.73 m2) has become evident. The National Kidney Foundation (NKF) in the United States has published a classification system based on GFR as well as urinary and anatomic abnormalities **(Table 1)** to enhance the identification and management of CKD **(Levin et al., 2008).**

Table (1): showed classification of stages of chronic kidney disease **(Levin et al., 2008)**

CLASSIFICATION OF STAGES OF CHRONIC KIDNEY DISEASE		
STAGE	**DESCRIPTION**	**GFR ML/MIN/1.73M^2**
1	Kidney damage with normal or increased GFR	≥ 90
2	Kidney damage with mild decrease in GFR	60-89
3	Moderate decrease in GFR	30-59
4	Severe decrease in GFR	15-29
5	Kidney failure	<15 Or dialysis

General management of CKD:

The general management of the patient with chronic kidney disease involves the following issues:

1. Treatment of reversible causes of renal dysfunction.
2. Preventing or slowing the progression of renal disease.
3. Treatment of the complications of renal dysfunction.
4. Identification and adequate preparation of the patient in whom renal replacement therapy **(RRT)** will be required **(Schieppati et al., 2005).**

Once it is determined that RRT will eventually be required, the patient should be counseled to consider the advantages and disadvantages of haemodialysis (in-center or at home), peritoneal dialysis (continuous or intermittent modalities), and renal transplantation (living or deceased