PREVALENCE AND CLINICAL SIGNIFICANCE OF HEPATITIS "C" VIRUS IN RENAL TRANSPLANT PATIENTS IN EGYPT

Thesis
Submitted for Partial Fulfillment
of M.Sc. Degree in *Internal Medicine*

By
Abd El-Monem Ibrahim Abd El-Ghafar
(M. B., B. Ch.,)

Supervised by

Prof. Dr. **Essam Mohammed Khedr**
Professor of Internal Medicine and Nephrology
Faculty of Mecidine - **Ain Shams University**

Dr. **Mohammed El-Tayeb Naser**
Assist. Prof. of Internal Medicine and Nephrology
Faculty of Medicine - **Ain Shams University**

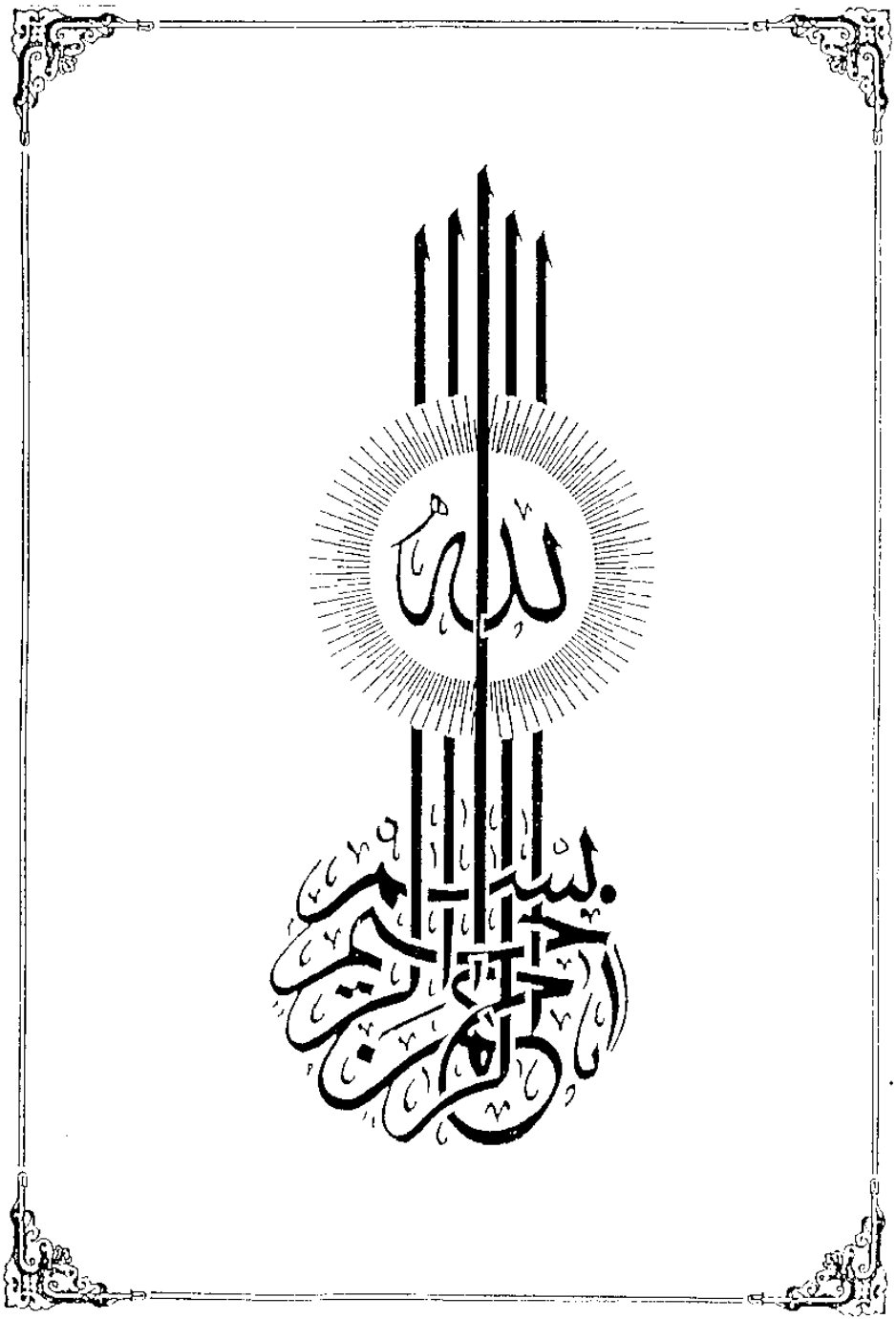
Dr. **Howayda Abdelhamid Elshinnawy**
Lecturer of Internal Medicine and Nephrology
Faculty of Medicine - **Ain Shams University**

Faculty of Medicine
Ain Shams University
1998

بسم الله الرحمن الرحيم

﴿... قال رب اشرح لى صدرى
ويسر لى امرى واحلل عقدة
من لسانى يفقهوا قولى ...﴾

"صدق الله العظيم"
"سورة طه آيه ٢٥-٢٧"



Acknowledgement

Above all and first of all thanks to ALLAH

I would like to express my sincere thanks and deepest gratitude to Prof. Dr. ***Essam Mohammed Khedr***, Prof. of Internal Medicine and Nephrology, Ain Shams University, who offered me the fatherly encouragement, the generous support, and many useful criticism and suggestion throughout this study, his precious guidance and continued supervision which were kindly given are beyond acknowledgement.

I wish to express my deepest gratitude to Dr. ***Mohammed El-Tayeb Naser***, Assist. Prof. of Internal Medicine and Nephrology, Ain Shams University, who offer me much of his experience for providing me with a helpful advise, suggestions and planning of this work and for kind supervision.

Iam deeply grateful to Dr. ***Howayda Abdelhamid Elshinnawy***, Lecturer of Internal Medicine and Nephrology, Ain Shams University, for her cardinal support and true assistance during this study, by offering me much of her time by suggestions, corrections and additions.

I would to express my sincere thanks to Dr. ***Mohammed Nawar***, Assist. prof. of hepathology and gastroentrology for his true assistance.

I wish to express my deepest thanks for all the medical staff and nurses of the National Institute of Urology and Nephrlogy for their generous co-operation in collecting the material required for this work specially Dr. ***Mohammed Amr Ayad***, Head of Nephrology and Transplantation Dept. and Dr. ***Seham Ahmed Said,*** Assist. Consultant and Head of Laboratories Departments.

Lastly I'm greatful to all patients who have shared in this study to whom I'm greatly indebted.

On the other hand any errors over and/or under simplifications are my own responsibility and I would be greatful to any person who takes the trouble to bring such matters to my attention.

Abd El-Monem Ibrahim
March, 1998

Contents

List of Abbreviations

HCV	Hepatitis C- virus.
HD	Haemodialysis.
HIV	Human immunodeficiency virus.
ALT	Alanine transaminase
ESRD	End stage renal disease
ELISA	Enzyme linked immunosorbent assay.
RIBA	Recombinant immunoblote assay.
PCR	Polymerase chain reaction.
IgM	Immunoglobulin M.
IgG	Immunoglobulin G.
HBV	Hepatitis B virus.
IFNα	Interferon alpha.
S.C.	Subcutaneous.
Ab	Antibody.
CMV	Cytomegallo virus.
EBV	Epstein Barr virus.
S.Cr.	Serum creatinine.
VZV	Varicella zoster virus.
HSV	Herpes simplex virus.
HBsAg	Hepatitis B surface antigen.
Tx	Transplantation.
UTI	Urinary tract infection
GN	Glomerulonephritis.
MPGN	Membranoproliferative GN
MGN	Membranous GN
EMCs	Essential mixed cryoglobulinaemias
Dx	Dialysis

List of Figures

List of Tables

Table (16):	*This table will show comparison between (+ve) and (-ve) cases according to various variables by using mean ± standard deviation and student - t- test.*
Table (17):	** By using chi- square test we compare between HCV (Ab) post. Tx and the following variable. * (1) Sex.*
Table (18):	*(2) Pre- Tx blood transfusion.*
Table (19):	*(3) Blood Transfusion during operation*
Table (20):	*(4) Recipient HCV - "Ab" pre- Tx.*
Table (21):	*Will show the (80) cases which has not seroconverted*
Table (22):	*Will show the (30) cases which sero-converted. from (- Ve) to (+ Ve) after Tx.*
Table (23):	*This table will show comparison between two seroconverted cases and that which has not converted as regard to other variables.*
Table (24):	** We use chi- square test to compare between seroconverted cases and not seroconverted cases as regard to other variables. * (1) Sex.*
Table (25):	*(2) Pre- transplant blood transfusion.*
Table (26):	*(3) Blood Transfusion per- transplant*
Table (27):	*(4) Recipient HCV - pre- transplant.*
Table (28):	*By using chi - square test we compare between PCR Post - Tx. and seroconversion of the Cases.*

INTRODUCTION

AIM OF THE WORK

INTRODUCTION

Renal transplantation is now an accepted treatment of patients in end-stage renal failure.

A successful transplant, restores not merely life but an acceptable quality of life to such patients.

Chronic liver disease is one of the major complications after kidney transplantation and affects late morbidity and mortality in the recipients ***(Jay A., et al., 1996).***

Many factors may be contributed, one of the most important causes is reported to be viral hepatitis, especially hepatitis - C - virus (HCV) infection. Thus it is essential to screen all prospective transplant recipients for the hepatitis B- and C- viruses and for liver disease, all are adverse factors for transplantation and in some patients would constitute contraindication. HCV infection causes the majority of non - A non - B - hepatitis ***(Alter et al., 1989).***

Although the virus has not been cultured, recombinant viral antigens have been made and are used in the laboratory to detect anti - HCV ***(Choo et al., 1989).***

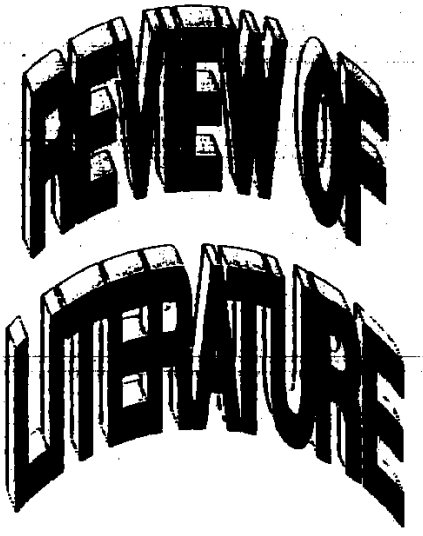
In renal units, HCV infection was related to both duration of dialysis and the number of blood transfusion units received ***(Pouteil - Noble et al., 1991).***

Prevalence rates in dialysis patients vary considerably in different parts of the world, and have been quoted as between 7% and 85% ***(S. Naicker, 1997).***

AIM OF THE WORK

Our aim in this study is:

* To detect the prevalence of HCV infection among renal transplant patients and to study clinical, serological and biochemical changes in the liver of (HCV) positive recipients.



INFECTIVE COMPLICATIONS OF RENAL TRANSPLANTATION

Infection is a leading cause of morbidity and mortality in transplant recipients with more than 80% suffering at least one episode of infection in the first year. ***(Peterson P.K., et al., 1981).***

Infection and rejection are intimately linked through the immunosuppressive therapy ***(Rubin RH., 1993)*** for example, to combat a rejection episode, increased doses of immunosuppressive agents are needed (which in turn increases the recipient's risk of infection). On the other hand, if the immunosuppression is decreased to help combat an infection. The patient is at higher risk for rejection ***(Rubin RH., 1993)***.

The risk of infection is strongly determined by an interaction between epidemiologic exposure and net state of immunosuppression ***(Rubin R. H. 1993).*** The transplant patient is susceptible to any environmental infectious exposure or reactivation of a previously latent infection ***(Rubin RH., 1993)***. In addition it is influenced by other factors; indwelling catheters, malnutrition, uraemia, hyperglycemia and infection with immunomodulating viruses such as cytomegalovirus (CMV), Epstein-Barr virus (EBV), HCV and human immuno-diffeciency virus (HIV).