Ain shams University
Faculty of Medicine
Tropical medicine department

Correlation between Fib 4 score and Hematological adverse events in patients with chronic hepatitis C virus infection under treatment by Interferon based Triple therapy

Thesis
Submitted for Partial Fulfillment of Master Degree
In Tropical Medicine
By:

ElSayed Gamal Mohammed
(M. B. B. CH)

Under Supervision Of

Prof. Dr. Mohamed Fawzy Montaser

Professor of Tropical medicine,former dean of Faculty of Medicine
Ain shams University

Prof. Dr. Samy Zaky Elsayed

Professor of Tropical medicine
Faculty of Medicine, Al-Azhar University (Damietta)

Dr. Mohamed Salaheldin Abd Elhamid

Lecturer of Tropical medicine
Faculty of Medicine, Ain shams University

2016

Acknowledgement

First and foremost, praise be to ***ALLAH*** for his help and generosity and giving me the force and confidence to finish this work.

I feel greatly indebted to ***Prof. Dr. Mohamed Fawzy Montaser*** Professor of Tropical medicine,former dean of Faculty of Medicine Ain shams University for the planning of this thesis and his continuous encouragement, guidance and supervision.

I would like to express my sincere gratitude and thanks to ***Prof. Dr. Samy Zaky Elsayed*** Professor of Tropical medicine Faculty of Medicine, Al-Azhar University (Damietta), for his kind supervision, encouragement and energetic help.

I would like, also, to record my deep thanks to ***Dr. Mohamed Salaheldin Abd Elhamid*** Lecturer of Tropical medicine Faculty of Medicine, Ain shams University, for his continuous guidance and supervision.

Finally I am deeply grateful to my family for their endless support and patience all over my life.

El Sayed Gamal Mohamed

2016

Contents

LIST OF Abbreviations

ALT	Alanine aminotransferase
AST	Aspartate aminotransferase.
b-DNA	branched DNA
CDC	Centers for Disease Control and Prevention
DAAs	Direct acting antiviral
DHS	Demographic Health Survey
EASL	European Association for the Study of the Liver.
EDHS	Egyptian Demographic Health Survey
EIA	Enzyme immunoassay
ELISA	Enzyme-linked immunosorbent assay.
ETR	End treatment response
EU	Europe
FDA	Food and drug administration
GBD	Global Burden of Diseases
GT	Genotypes
HAV	Hepatitis A virus
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus The nonstructural
HIV	Human immunodeficiency virus
HVR	Hypervariable regions
IFN	Interferon
INR	international normalized ratio
LB	liver biopsy
LIPA	Line probe assay.

MOH	Ministry of health
NLI	National Liver Institute.
NIs	nucleoside inhibitors
NS	Nonstructural
NNIs	nonnucleoside inhibitors
PAT	parenteral anti schstisomal therapy
PCR	Polymerase chain reaction.
PEG•IFN	PEGylated interferon
PLTs	platelets count
PT	prothrombin time
RBV	ribavirin
RIBA	recombinant immunoblot assay
RVR	Rapid virological response
SOF	Sofosbuvir
SPP	signal peptide peptidase
SVR	Sustained virology response
TMA	Transcription- mediated amplification.
UTR	Un-translated regions
WHO	World Health Organization

List of figures

List of Tables

Keywords

-Fib4

-Hematological adverse events of sofosbuvir

-Triple therapy

ABSTRACT

Chronic hepatitis C is a major cause of cirrhosis, end stage liver disease and hepatocellular carcinoma. The population of Egypt has a heavy burden with HCV**.** The primary aim of anti-HCV therapy is permanent eradication of the virus or a sustained viral response there by reducing the risk of progression to end-stage liver disease and improving quality of life.

In Egypt, Patients infected with HCV genotype 4 and are eligible to IFN therapy can be treated with a combination of weekly PEGylated IFN-α, daily weight-based ribavirin (1000 mg in patients <75 kg or 1200 mg in patients ≥75 kg,), and daily sofosbuvir (400 mg) for 12 weeks). However, these drugs together with HCV itself have been reported to cause multiple hematological side effects e.g. anemia, neutropenia and thrombocytopenia

It has been reported that hematologic adverse effects during treatment by Peg INF and RBV are more common in patients with more advanced degree of fibrosis, in addition fibrosis score may be used as Predictor of response of HCV infected patients to therapy.

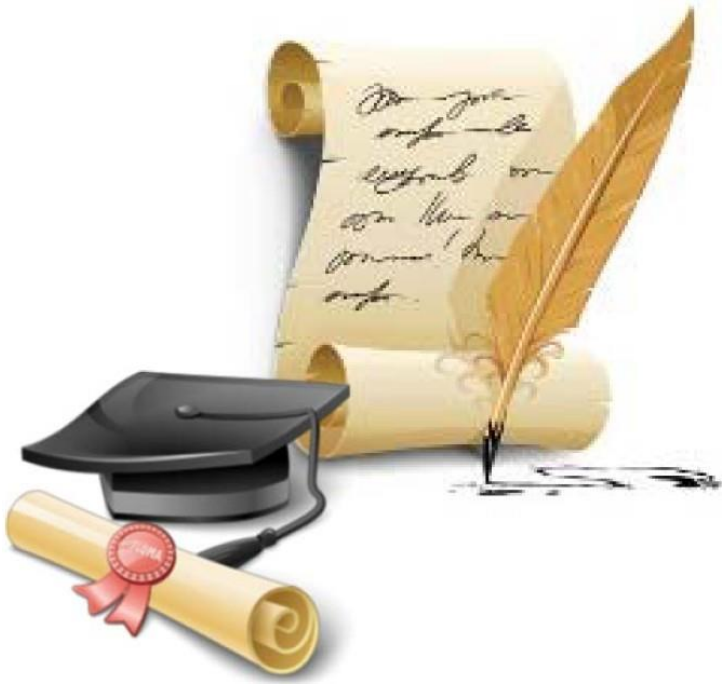
Aim of the work:

Assessment of relation between degree of fibrosis assessed by Fib4 and both response to treatment and hematological adverse effects related to treatment.

CONCLUSION:

Our research found that there is no association of degree of fibrosis assessed by Fib4 and SVR, but hematological adverse effects e.g. anemia, leucopenia, and neutropenia were common in patients with high degree of fibrosis assessed by Fib4

lntroduction



Introduction

Hepatitis C virus infection is a serious worldwide problem. According to the World Health Organization, An estimated 130–170 million people are infected with hepatitis C worldwide leading to significant morbidity, mortality, and financial burden on healthcare **(WHO, 2013)**. Out of people who contract the infection, 75–85% will develop chronic infection, 60–70% will develop chronic liver disease, 5–20% will develop cirrhosis over the course of their chronic infection, and 1–5% will die of complications including hepatocellular carcinoma (HCC) **(Wise *et al*., 2008).**

Hepatitis C virus (HCV) has a long and relatively symptom-free incubation period prior to causing serious illness. An estimated 65–75% of currently infected individuals are unaware of their infection. The consequences of these undiagnosed and untreated chronic infections are expected to be staggering as this population ages with predictive models suggesting a two-fold increase in HCV-related deaths in the next few years **(Ly *et al*., 2012)** and, without intervention, a four-fold rise in the incidence of end-stage liver disease related to hepatitis C within the next 20 years **(Rein et al., 2011)**.

Egypt has the largest epidemic of hepatitis C virus in the world **(WHO. 2011)**. Egyptian Demographic Health Survey [EDHS] tested a representative sample of the entire country for HCV antibody. The sample included both urban and rural populations and included all 27 governorates of Egypt. Over 11,000 individuals were tested. The overall prevalence positive for antibody to HCV was 14.7 ***%*** **(El-Zanaty *et al*., 2009).**