بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY

Effect of Direct Acting Antiviral Therapy on Lipid Profile in Egyptian Patients with Chronic Hepatitis C Infection

Thesis

For Partial Fulfillment of Master Degree
in **Gastroenterology**

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قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

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Shimaa Adel Mahdy Ahmed

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List of Abbreviations

Abb.	Full term
AA	*Arachidonic acid*
BCRP	*Breast cancer resistance protein*
BMI	*Body mass index*
CH25H	*Cholesterol 25-hydroxylase*
CHC	*Chronic hepatitis C*
CYP	*Cytochrome P450*
CYP450	*Cytochrome P450*
DAA	*Direct acting antiviral*
DHA	*Docosahexaenoic acid*
EIAs	*Enzyme-linked immunoassays*
ER	*Endoplasmic reticulum*
HC	*Hydroxycholesterol*
HCV	*Hepatitis C virus*
IFN	*Hepatocellular carcinoma (HCC interferon alfa*
IL28B	*Interleukin 28-B*
ISGs	*Interferon-stimulated genes*
IU	*International units*
LDL	*Low-density lipoprotein*
LDLR	*Low-density lipoprotein cholesterol receptor*
LDV	*Ledipasvir*
LPV	*Lipoviral particle*
LVP	*Lipoviroparticle*
MSM	*Men who have sex with men*
NS	*Nonstructural*
NS5A	*Nonstructural 5A*
ORF	*Open reading frame*
PIs	*Protease inhibitors*
PWID	*People who inject drugs*
RBV	*Ribavirin*

List of Abbreviations (Cont...)

Abb.	Full term
RT-PCR-	*Reverse transcriptase-PCR-*
SCD1	*Stearoyl coenzyme A desaturase 1*
SIM	*Simeprevir*
SNPs	*Single nucleotide polymorphisms*
SOF	*Sofosbuvir*
SP	*Signal peptidase*
SPP	*Signal peptide peptidase*
SREBP	*Sterol regulatory element-binding protein*
SVR	*Sustained virological response*
T2DM	*Type 2 diabetes mellitus*
TG	*Triglyceride*
TLR	*Toll-like receptor*
TMA	*Transcription-mediated amplification*
TMD	*Transmembrane domains*
VLDL	*Very-low density lipoproteins*
WHO	*World Health Organization*

INTRODUCTION

Liver plays fundamental role in lipid metabolism and hepatitis C virus (HCV) is linked to the lower lipid profiles and the progression of the chronic liver disease ***(Dai et al., 2015).***

Globally over 177.5 millions of people chronically infected with HCV as a prevalence of 2.5% of World population and it is serious burden of global health ***(Petruzziello et al., 2016).*** And the prevalence of serum anti HCV is higher in Egyptaion population ***(Yang et al., 2010).***

Several studies reported that HCV associated with lower lipid profiles and predisposes to dyslipidemia, liver steatosis or advanced fibrosis ***(Dai et al., 2015).***

Lipids also play an important role in HCV life cycle or its structure. However hypobetalipoproteinemia caused by HCV binding to lipoprotein was already reported and it is may be one of the main pathway to lowering lipid profiles during HCV infection ***(Grassi et al., 2016).***

Several studies have reported dysregulated serum lipid levels in HCV infection, especially low levels of low-density lipoprotein cholesterol (LDLC) ***(Kuo et al., 2011)*** and little is known about the serum triglyceride (TG) levels in HCV infection.

Another study reported that TG may contribute to liver fibrosis due to deposition of TG and liver steatosis ***(Nagano et al., 2015).*** There is limited number of studies determined lipid profile influence of fibrosis stage chronic HCV infection.

Although protease inhibitors and other direct acting anti-viral drugs have been used in the Western countries, but the Pegylated interferon-alpha (PegIFN) and ribavirin (RBV) combination therapy for chronic hepatitis C (CHC) is still remaining the major treatment for HCV infection in many countries ***(Yu and Chuang, 2015).***

The clearance of the HCV RNA is the main determinant of the increase of lipids after PegIFN/RBV treatment. However advanced fibrosis also has an effect in increase of lipids after the treatment ***(Batbold et al., 2018).***

During treatment with direct acting antiviral therapy the serum lipid profile may reflect not only recovery from the disruption of lipid metabolism induced by HCV but also pharmacological effect of DAAs ***(Takako et al., 2018).***

Since the change of the lipid profiles are interesting after curing of the HCV infection and not be well-documented, we aimed to evaluate the effect of antiviral therapy on lipid profiles and to investigate the factors related to the changes of lipid profiles in CHC patients.