



Neurocognitive Dysfunctions in Adolescents with Chronic HCV infection

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

لَسِبْنَا نِكَ لَا نَعْلَمُ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
ASLD	American association for the study of liner disease
bDNA	Branched deoxyribonucleic acid
BMECS	Brain micro vascular endothelial cells
CDI.....	Child Depression Inventory
Cho/cr.....	Choline/creatine
CLIA	Chemiluminescence immunoassay
DAAs.....	Direct antivirals agents
DAT.....	Dopamine transporter
DSMIV criteria...	Diagnostic & statistical manual of mental disorders 4 th edition
ELISA	Enzyme-linked immunosorbent assay
ERK	Extracellular signal-related kinase
FACIT-F	Functional assessment of chronic illness therapy-fatigue
FDA.....	Food and Drug administration
FDG	¹⁸ F-fluoro-deoxy-glucose
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
HRQL.....	Health-related quality of life
ICD.....	International Classification of disease
LOD	Lower limit of detection
MHE	Minimal hepatic encephalopathy
MRES.....	Internal ribosomal entry site
MRS	Magnetic resonance spectroscopy
NAA	N-acetyl-aspartate
NAT	Nucleic acid test

List of Abbreviations Cont...

Abb.	Full term
NS3	Non-structural protein 3
PCR.....	Polymerase chain reaction
PET	Positron emission tomography
Phospho-ERK	Extracellular single regulated kinase
QRTPCR	Quantitative Real-time polymerase chain reaction
RCMAC.....	Revised children's manifest anxiety scale
RNA	Ribonucleic acid
RT-PCR.....	Real-time polymerase chain reaction
SERT.....	Serotonin transporter
SF(36)	Short form 36
SPECT	Single-photon emission tomography
STAT3.....	Signal transducer and activator of transcription 3
SVR.....	Sustained virologic response
TLR2	Toll-like receptor 2
TMA	Transcription-mediated amplification
WISC III	Wechsler Intelligence Scale III for Children

INTRODUCTION

Globally in 2015, an estimated 71 million people represented 1% of the world's population including 5 million children, were living with chronic HCV infection, with the highest prevalence in the WHO Eastern Mediterranean region and the European region. (*Sokal and Nannini., 2017; El-Shabrawi and Kamal., 2013*)

The estimated prevalence is ranged from less than 1.0% in northern Europe to more than 2.9% in northern Africa. (*Alter, 2007*) In Egypt, the prevalence varies throughout the country with the highest prevalence in northern Nile Delta. The prevalence of HCV infection in Egyptian children is 3% in Upper Egypt and 9% in Lower Egypt. (*Frank et al., 2000*)

The course of HCV infection in children is generally more benign than that seen in adults; approximately 30 percent of infected children will develop symptomatic or progressive disease and be at risk for cirrhosis and hepatocellular carcinoma later in life. (*Behairy, 2016*)

Neuropsychiatric disorders and neurocognitive dysfunction are reported in nearly 50% of patients with chronic HCV infection, which are independent of the severity of liver disease or HCV replication rates. Fatigue, sleep disturbance,