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List of abbreviations

AFP	Alpha- fetoprotein
ALB	Albumin
AlkPh	Alkaline phosphatase
ALT	Alanine transaminase
ANC	Absolute neutrophilic count
AST	Aspartate transaminase
BMI	Body mass index
CDC	Centers for Disease Control and Prevention
Creat	Creatinine
EIA	Enzyme immunoassay
ELISA	Enzyme linked immunosorbent assay
EVR	Early viriological response
ETR	End treatment response
Hb	Hemoglobin
HAV	Hepatitis A virus
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
HVR	Hyper variable regions
IFN therapy	Interferon therapy
IgG	Immunoglobulin G
IgM	Immunoglobulin M
MOHP	Ministry of Health and Population
NIH	National Institutes of Health
NLI	National Liver Institute
Plt	Platelets
PT	Prothrombine time

RIBA	Recombinant immunoblot assay
RBV	Ribavirin
RT-PCR	Reverse transcription polymerase chain reaction.
SD	Standard deviation.
SVR	Sustained Virological Response
T.Bil	Total bilirubin
TMA	Transcription- mediated amplification
WBC	white blood celles
Wt	weight
$\mathbf{X^2}$	Chi-square test

Abstract

Introduction: Pegylated interferon and ribavirin combination therapy currently represents the standard of care for the treatment of chronic hepatitis C infection. Hematological side effects of pegylated interferon and ribavirin occur frequently and limit adherence to therapy and, ultimately, treatment efficacy.

Aim: the study of the hematological side effects of peg interferon and ribavirin and its impact on the virological responses.

Methods: 1080 Adult patients with chronic hepatitis C who were treated with Peg-IFN α-2b at a dose of 1.5 μg/kg or Peg-IFN α-2a at a dose of 180 μg/week plus a ribavirin dose of 1,000-1,200 mg/day, according to weight.

Results : Anemia occurred in about 52.2% of the studied patients as the following : mild anemia (Hb<12 gm/dl) in 27.4% , moderate anemia (Hb<10 gm/dl) in 15.7% and severe anemia (Hb<8.5 gm/dl) in 9.1% and this led to ribavirin dose modification in about 15.7% of patients and its stoppage occurred in about 9.1% of patients.

Neutropenia was also a common side effect which occurred in about 45.6% of the studied patients as the following : mild neutropenia (ANC<1500/μL) in 31.2% , moderate neutropenia (ANC<750/μL) in 19.8% and severe neutropenia (ANC<500/μL) in 4.7% and this led to interferon dose modification in about 19.8% of patients and its stoppage in about 4.7% of patients.

Thrombocytopenia occurred in about 40.7% of the studied patients as the following : mild thrombocytopenia (platelets<150000/μL) in 35.8% , moderate thrombocytopenia (platelets <500000/μL) in 3.6% and severe thrombocytopenia (platelets <25000/μL) in 1.3% and this led to interferon dose modification in about 3.6% of patients and its stoppage in about 1.3% of patients.

Modification of Ribavirin dose was associated with decrease in response all over the weeks of therapy and it appeared more profound when this modification led to Ribavirin dose to fall below 70% of recommended dose or when this modification had occurred in the first 24 weeks even to lesser extent.

Conclusions: Adherence to treatment is important to optimize the desirable SVR and reduction of the dose of either peg interferon or Ribavirin in first 12 weeks of therapy sharply lowered the EVR and so SVR , also reduction of the total dose to less than 70% is associated with a sharp fall in SVR **.**