Prognostic Value of Serum Ferritin In Chronic Hepatitis C Patients Receiving Pegylated Interferon And Ribavirin Combination Therapy

Thesis
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بسم الله الرحمن الرحيم
إقرأ باسم ربك الذي خلق ﴿١﴾ خلق
الإنسان من علق ﴿٢﴾ إقرأ وربك
الأكرم ﴿٣﴾ الذي علم
بالقلم ﴿٤﴾ علم الإنسان
ما لم يعلم ﴿٥﴾
صدق الله العظيم
سورة العلق
الآيات (١-٥)

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INTRODUCTION

Chronic hepatitis c is an important liver disease , which may progress to cirrhosis or hepatocellular carcinoma. (**Sener et al., 2012)**

Hepatitis C is the principal cause of death from liver disease and the common leading indication for liver transplantation, some calculations suggest that mortality related to HCV infection (death from liver failure or hepatocellular carcinoma) will continue to increase over the next two decades***(Deuffic-Burban et al.,2007)***

Pegylated interferon (PEG-IFN) and ribavirin combination therapy is the current standard treatment for chronic hepatitis c infection **(Norihisa et al., 2010)**

Several virus and host related predictors of treatment response are known, such as HCV genotype, baseline viral load, age, body weight, race, gender, liver histology, baseline gamma glutamyl transferase level, baseline alanine aminotransferase level and insulin resistance. ***(E.Lukasiewicz et al.,2010).***

Iron is an essential substrate for the growth of all organisms, and may facilitate viral replication. Iron may act in synergism with hepatitis C virus (HCV) to accelerate the

progression to cirrhosis and liver carcinoma. It has been previously observed that serum iron indices, and liver iron deposition are frequently raised in patient with chronic viral hepatitis. (***Distante et al.,2002).***

Many recent studies suggested a new predictors of therapeutic response to IFN therapy as serum iron and serum ferritin. However the correlation between serum ferritin level and therapeutic response to IFN and RBV combination therapy remain controversial.***(Norihisa et al;2010)***

AIM OF THE WORK

In this study we aimed to evaluate the relationship between serum ferritin and response to pegylated interferon & ribavirin combination therapy in Egyptian patient with chronic hepatitis C infection .

Chapter 1

Hepatitis C Virus

A) Prevelance of HCV

The World Health Organization has declared hepatitis C a global health problem, with approximately 3% of the world's population (roughly 170-200 million people) infected with HCV. In the US, approximately 3 million people are chronically infected, many of whom are still undiagnosed**. (Zaniab et al .,2006).**

In Egypt the situation is quite worse the current population in Egypt is about 78 to 80 million. 14.7% of this population (0.147 X 78 million) is 11,466,000 persons who have been infected with this virus. This number is an underestimate because it does not include the number of people who have been infected that are under 15 years of age or over 60 years of age. Not everyone remains infected but Egypt Demographic and Health Survey (EDHS) reported that 9.8% continue to have HCV RNA. That means almost 10% of the total population are infected and are infectious to other people. That is 7.8 million people with chronic active HCV infection. The issue of treatment for those that develop HCV related liver disease is essentially a medical care crisis for the country.

Transmission of HCV from person to person in Egypt is of course continuing. It has been estimated that an over all 6/1000 new infections each year. In terms of absolute numbers of people in Egypt getting infected this over 500,000 individuals. 70,000 of them are children. This is a public health emergency**. (El-Zanaty, et al. 2009. Egypt Demographic and Health Survey)**

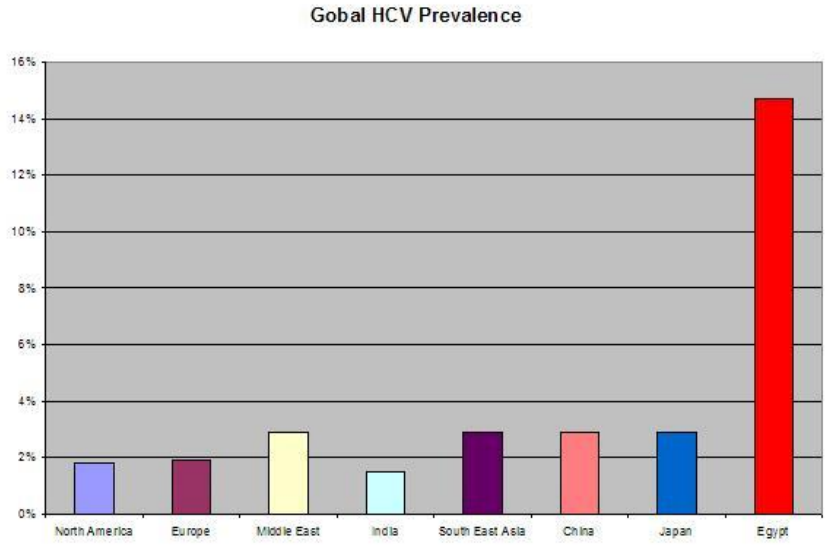

Fig. (1): Hepatitis C virus in Egypt compared to other countries in the world is shown below in the graph.

El-Zanaty, Fatma and Ann Way. 2009. Egypt Demographic and Health Survey. Cairo, Egypt: Ministry of Health.

In Egypt, the major risk factor associated with HCV infection is a history of antischistosomal injection treatment

before 1986. Schistosomiasis used to be a common parasitic disease in Egypt acquired through swimming or wading in contaminated irrigation channels or standing water. Thus, farmers and rural populations were at greatest risk, and this is supported by the higher prevalence rate of HCV in the Nile delta and rural areas. Schistosomiasis can lead to urinary tract or liver damage over many years.Prior to 1986 the mainstay of treatment was intravenous tartar emetic. Widespread treatment campaigns were carried out in the countryside of Egypt in the 60's-70's and early 80's. At the time of availability of only glass syringes, needles were routinely inadequately sterilized by boiling due to time restraints and limited resources. Overall, despite improvement in schistosomiasis - related morbidity between1980-1990, these treatment campaigns set the stage for the current large hepatitis **(Zainab et al., 2006)**

B) Natural history of HCV infection:

The natural history of chronic HCV infection varies greatly and is only partially understood**.**An average of 60% to 70% of infections lead to a chronic carrier state; 10% to 20% of chronic carriers develop liver cirrhosis, and 1% to 5% develop hepatocellular carcinoma. Older age at time of infection, male gender, diabetes, alcohol use, and co-infection with HIV or HBV appear to increase the risk of progressive liver disease. **(fariba,2010)**

STORY AND PROGNOSIS OF HCV

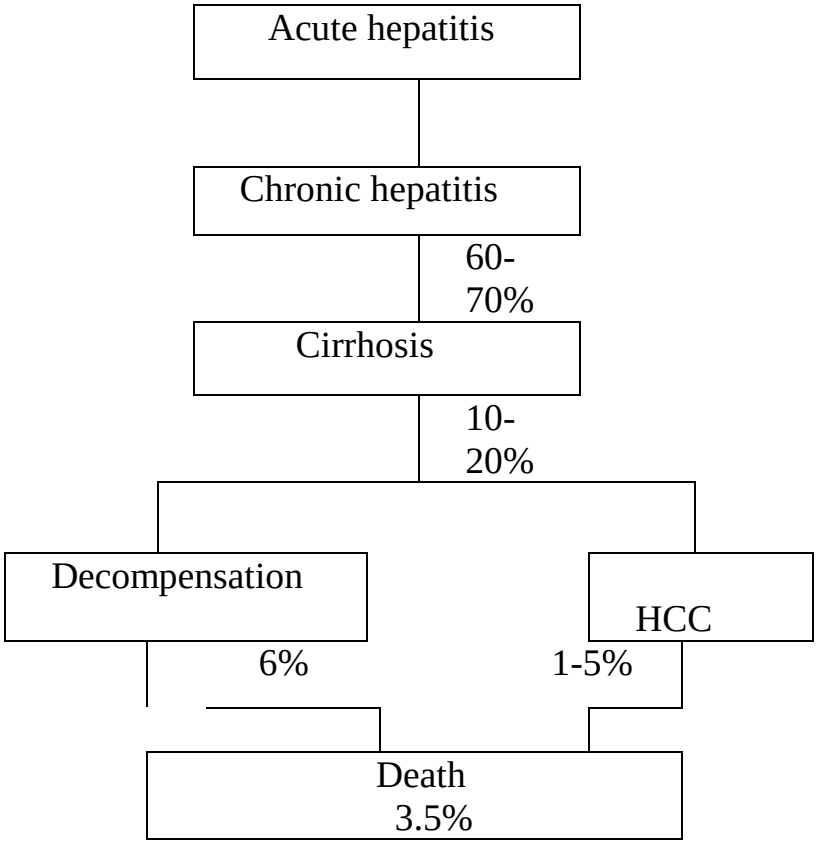

Fig (2) : Natural history of HCV