MSCT SIGNS OF HPS EVALUATION IN 100 EGYPTIAN PATIENTS WITH POST-HEPATITIS C LIVER CIRRHOSIS

Thesis
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Abstract

Keyword: IPVDS- MSCT- HPS-CPT- CIRRHOSIS.

HPS should be ruled out in a patient with hypoxemia and chronic hepatic disease and knowledge of such a syndrome is essential to formulate a diagnosis – thus influencing therapeutic strategies. Management should equally involve pulmonologists, hepatologists and, in particularly severe cases, transplant surgeons in a multidisciplinary approach. Patients with HPS are given a higher priority on the waiting list for liver transplantation based on the observation that liver transplantation outcome may be poorer in cases of advanced disease. Without liver transplantation the prognosis for HPS is poor with mortality usually because of complications of the hepatic disease rather than to a primary respiratory event.

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LIST OF ABBREVIATIONS

A1AD	**Alpha 1 Antitrypsin Deficiency**
ABG	**Arterial Blood Gases**
ALP	**Alkaline Phosphatase**
ALT	**Alanine Transaminase**
ARDS	**Acute Respiratory Distress Syndrome**
AST	**Aspartate Aminotransferase**
COPD	**Chronic Obstructive Pulmonary Disease**
CPT	**Child-Pugh-Turcotte Classification**
EDHS	**Egyptian Demographic Health Survey**
GIT	**Gastrointestinal Tract**
HAV	**Hepatitis A Virus**
HBV	**Hepatitis B Virus**
HCC	**Hepatocellular Carcinoma**
HCV	**Hepatitis C Virus**
HIV-1	**Human Immunodeficiency Virus Type 1**
HPS	**Hepatopulmonary Syndrome**
IBD	**Inflammatory Bowel Disease**
INR	**International Normalized Ratio**
IPVDS	**Intrapulmonary Vascular Dilatation Syndrome**
LT	**Liver Transplantation**

Lt	**Left**
MENA	**Middle East And North Africa Region**
MRI	**Magnetic Resonance Imaging**
MSCT	**Multi-Slice Computed Tomography**
NASH	**Non Alcoholic Steatohepatitis**
NHTMRI	**National Hepatology and Tropical Medicine Research Institute**
NO	**Nitric Oxide**
PAT	**Parenteral Antischistosomal Therapy**
PC	**Prothrombin Concentration**
PO_2	**Partial Pressure of Oxygen/Arterial Oxygen Tension**
PPH	**Portopulmonary Hypertension**
PT	**Prothrombin Time**
Rt	**Right**
SBP	**Spontaneous Bacterial Peritonitis**
TIPS	**Transjugular Intrahepatic Portosystemic Shunt**
TTE	**Transthoracic Echocardiography**
US	**Ultrasonography**
+ve	**Positive**
-ve	**Negative**
WHO	**World Health Organization**

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INTRODUCTION

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Lung complications may occur as a result of hepatic disease from any cause and represent a highly heterogeneous group of conditions. Early recognition of such complications may be challenging but is crucial both in forming a meaningful differential diagnosis and in avoiding severe sequelae and irreversible damage. In such patients, lung complications are often misdiagnosed because anemia, ascites and muscle wasting are more common causes of respiratory symptoms. Although a number of different pathogenetic mechanisms are likely to be involved, chronic liver dysfunction may cause pulmonary manifestations because of alterations in the production or clearance of circulating cytokines and other mediators. This is likely to be the case in hepatopulmonary syndrome (HPS) ***(Spagnolo et al., 2010).***

A relationship between the liver and the lung was first noted by Fluckiger (1884) based on his observation of a woman with cirrhosis, cyanosis, and clubbed digits. This relationship was not formalized until almost a century later when Kennedy and Knudson (1977) described 'hepatopulmonary syndrome' as a clinicopathological entity characterized by hypoxemia and the pathogenetic hallmark of intrapulmonary vascular dilatation ***(Vincent, 2008).***

HPS is defined as the triad of liver disease, arterial hypoxemia (arterial oxygen tension less than 70 mmHg) and intrapulmonary vascular dilatation ***(Krowka, 2000).*** It is found most commonly in the setting of cirrhosis and manifests clinically as progressive dyspnea, cyanosis, spider nevi, clubbing, hypoxemia, platypnea and orthodeoxia ***(Kim et al., 2009).***

In the appropriate clinical setting (i.e., patients with liver disease and hypoxemia in the absence of significant cardiopulmonary disease), the diagnosis of HPS requires evidence of pulmonary vascular dilatation. Contrast-enhanced transthoracic echocardiography represents the diagnostic gold standard for HPS ***(Rodriguez and Krowka 2008).*** However, CT findings of HPS include dilatation of distal peripheral lower lobe pulmonary arteries that do not taper normally and extend out to the pleural surface, juxtapleural telangiectasia and nodular dilatation of peripheral pulmonary vessels ***(McAdams et al., 1996).***

Currently hepatitis C is the most significant public health problem in Egypt with an estimated prevalence of 14.7% among the 15–59 years age group according to the Egyptian Demographic Health Survey (EDHS) ***(El-Zanaty and Way, 2009).*** Approximately 50% to 85% of infected individuals develop chronic hepatitis among whom 20 % progress to cirrhosis making chronic hepatitis C the number one cause of liver cirrhosis in Egypt ***(Al-Sherbiny et al., 2005).*** According to this striking prevalence and since HPS is found most commonly in the setting of cirrhosis, in the study conducted HPS was evaluated among patients of post hepatitis C cirrhosis.

AIM OF STUDY

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The objective of conducting this research was to study the prevalence of HPS among post hepatitis C cirrhotic patients using MSCT.

REVIEW OF LITERATURE