بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / هناء محمد علي

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: ....

Assessment of Right Lobe Size/Serum Albumin Ratio as A non-Invasive Marker for EsophagealVarices in HCV Patients

A thesis

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قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

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List of abbreviations

AASLD	American Association for the Study of Liver Diseases
ACG	American College of Gastroenterology
ADH	anti−diuretic hormone
Alb	Albumin
ALT	Alanine Transaminase
AST	Aspartate Transaminase
BMI	body mass index
CBC	Complete Blood Count
CDU	Color Doppler ultrasound
CPS	Child−Pugh score
CSPH	clinically significant portal hypertension
EGD	Gastroesophageal endoscopy
EUS	endoscopic ultrasound sonography
EVL	endoscopic varicose ligation
EVS	Esophageal varices
GVs	gastric varices
HBsAg	Hepatitis B surface Antigen
HCV	hepatitis C virus
HCV Ab	Hepatitis C Virus antibody
OV	Oesophageal varices
PH	Portal Hypertension
PT	Prothrombin Time
RLLD/Alb	The right liver lobe diameter/serum albumin
SD	Spleen diameter

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ABSTRACT

Background; Oesophageal varices are the most critical porto-systemic shunts that develop secondary to portal hypertension, which is considered the main complication of liver cirrhosis. Many studies recommend the screening of all cirrhotic patients by endoscopy, but repeated endoscopic examinations are unpleasant for patients and have a high- cost impact and burden on endoscopic units, **Aim and objectives;** to investigate the value of measurement of (Rt. lobe diameter/ serum albumin ratio) in the prediction of esophageal varices, **Subjects and methods;** This was Case-control study, was carried out at outpatient clinics of Hepatology and inpatient department of Gastroenterology at Ain Shams University Hospital on 100 patients divided into 3 groups: (Group 1): 30 patients with Child-Pugh A, (Group 2): 30 patients with Child-Pugh , (Group 3): 40 patients with Child-Pugh C, during a period of 6 months, **Result;** There were highly significant difference between both groups as regard Platelet count /spleen diameter ratio and Right liver lobe size/Serum Albumin ratio, **Conclusion;** The use of Right liver lobe/serum albumin ratio can help physicians by restricting the use of endoscopic screening only to patients presenting a high probability of esophageal varices. This is especially useful in clinical settings where resources are limited, and endoscopic facilities are not present in all areas, **Keyword: Non-invasive diagnosis of oesophageal varices; Right liver lobe size/serum albumin ratio; Oesophageal varices; HCV.**

INTRODUCTION

Egypt has the highest prevalence of hepatitis C virus (HCV) in the world. In Egypt, HCV prevalence rates reach 13% of the population equating to an estimated 12 million Egyptians **(Kamal et al., 2018).**

Esophageal varices (EVS) are one of the most important comorbidity related liverdisease; ultimately 20% mortality during the first attack.Using 2D U/S was useful for EVs prediction **(Abdel-Aty et al., 2017).**

Patients chronically infected by the hepatitis C virus (HCV) are at risk of developing major liver complications.one-third Up to two-thirds of HCV-infected patients also experienced extra hepatic manifestations **(Mölleken C et al., 2019).**

Many studies have suggested that up to 30% of infected individuals will develop cirrhosis, leading to end-stage liver failure and HCC **(Frerichs et al., 2012).**

Screening for varices is recommended in patients with cirrhosis to institute primary prophylaxis to prevent variceal bleeding **(Tseng et al., 2018).**

Varicealbleedin is one of the complications of cirrhosis that defines progression to the stage of decompensated cirrhosis, with a mortality as high as 40%, depending on the severity of liver disease **(Jacob and Garcia-Tsao, 2019).**

Variceal bleeding is a dramatic complication of cirrhosis. Primary prophylaxis against variceal bleeding is indicated for patients with high-risk varices. In order to identify thesepatients, endoscopic screening for

esophageal varices has been traditionally recommended at the time of the diagnosis of cirrhosis. Considering that many patients do not have esophageal varices in the early stages of cirrhosis and, therefore, are submitted unnecessarily to endoscopy, non-invasive methods for variceal screening have been studied **(Mattos et al., 2019).**

AIM OF THE WORK

The aim of the current study Is to investigate the value of measurement of (Rt. lobe diameter/ serum albumin ratio) in the prediction of esophageal varices.

Chapter (1)

Esophageal Varices

Introduction

Hematemesis and melena are often the first symptoms of bleeding from the upper digestive tract, i.e. the esophagus, stomach, or duodenum. Despite popular beliefs, these are not rare symp− toms. Reports from intensive care units inform that they are the primary cause of admission in 10% of all cases. **(Chaibou et al., 2020)**

The most common diagnosis is duo− denal or stomach ulcer or hemorrhagic gastritis (including portal gastropathy) and esophageal varices (EVs). Non−steroid anti−inflammatory agents, especially when combined with corticos− teroids, add additional bleeding risk. Most of these bleedings do not cause significant medical conse− quences, but some may be life−threatening. **(Hashizume et al., 2020)**

Hematemesis and melena may or may not be pre− sent at the same time and do not provide enough information about the location or extent of the bleeding. Hematemesis can be observed even in duodenal bleeding, while the presence of blood in stool samples depends on the amount of blood reaching the small intestine (minimum: 50 ml). If intestinal passage is accelerated, it is even possible to detect fresh blood in the stool. Digestive tract bleeding may be simulated by bleeding from the upper respiratory tract (blood swallowed from the nasopharynx, nasal cavity, or pharynx). **(Gines et al., 2019)**

Distressed patients usually cannot provide useful information about the volume of vomit, and the blood almost always reaches the small

intestine. Lack of symp− toms of hypovolemic shock does not exclude the possibility of massive hemorrhage (over 30% of blood loss), and the patient's condition may be quite good at the beginning. Locating the source of bleeding, assessing its intensity, and introducing appropriate treatment have significant impact on the patient's life. **(Leveen et al., 2019)**

Portal Hypertension (PH)

The celiac system consists of: the superior mesenteric vein, which collects blood from the small intestine and the right part of the colon, the splenic vein, supplied by the inferior mesenteric vein that directs blood from the spleen, left part of the colon, and rectum, and the left gastric vein. **(Bretagne et al., 2019)**

These three vessels connect and create the portal vein (or portal system), optionally supplied by pancreatic or vesicular vessels. The portal vein has no valves and it drains blood into the liver, where the blood from the portal vein is mixed with that from the hepatic artery and drains further to the inferior vena cava. **(Tripathi et al., 2021)**

The system of these vessels usu− ally differs in architecture. Normal portal pressure varies between 4–8 mm Hg. In case of an obstruc− tion, when natural connections needed to sustain normal flow from the celiac system to the inferior vena cava become insufficient, the portal pressure increases greatly. Smith classified PH into: pre− sinusoidal obstruction: a) extrahepatic (usually portal vein obstruction) and b) intrahepatic (such as schistosomatosis, bilharziosis); sinusoidal obstruction: **(Terblanche et al., 2021)**

Wilson's disease, hepatic cirrhosis; extrasinu− soidal obstruction: a) intrahepatic (post−alcoholic cirrhosis), b) extrahepatic (Budd−Chiari syndrome), caused by cardiac dysfunctions (pericarditis, right ventricular insufficiency), d) caused by increased blood flow (arteriovenous fistulas). **(Lebrec et al., 2019)**

The etiology of PH among adults in Europe and in the USA is dominated by chronic liver dis eases, usually hepatic cirrhosis, with 90% of cases are caused by intrahepatic block. Over 50 years ago, Ludington stated that in 92% of patients with Laennec's cirrhosis, chronic (1–7 years) alco− holism was the primary cause. In children, obstruction of the portal vein is more common (pre−sinusoidal obstruction in ca. 10%), while extrahepatic block, which could cause obstruction of the hepatical veins due to thrombosis or exter− nal pressure (Budd−Chiari syndrome), is less com− mon. **(Monnin et al., 2020)**

PH is not a separate disease entity, but a com− plex hemodynamic disorder. When it is present for a prolonged period of time it leads to the develop− ment of an extensive network of portosystemic collaterals. One of these collateral systems is through the vessels in the esophageal mucosa that collects blood from the left (coronal) gastric vein. The blood is later drained to the azygos and hemi− azygos veins and later to the superior vena cava. **(Tripathi et al., 2021)**

The submucosal vessels of the esophagus are sur− rounded by a small amount of perivascular tissue and do not have valves. These factors make them prone to increasing blood pressure, which leads to their dilatation, called esophageal varices. The blood flow in the varices is bidirectional and changes with the breathing cycle due to the exis− tence