ALPHA-1 ANTITRYPSIN AS A DISCRIMINATIVE PARAMETER BETWEEN MALIGNANT AND CIRRHOTIC ASCITES

THESIS

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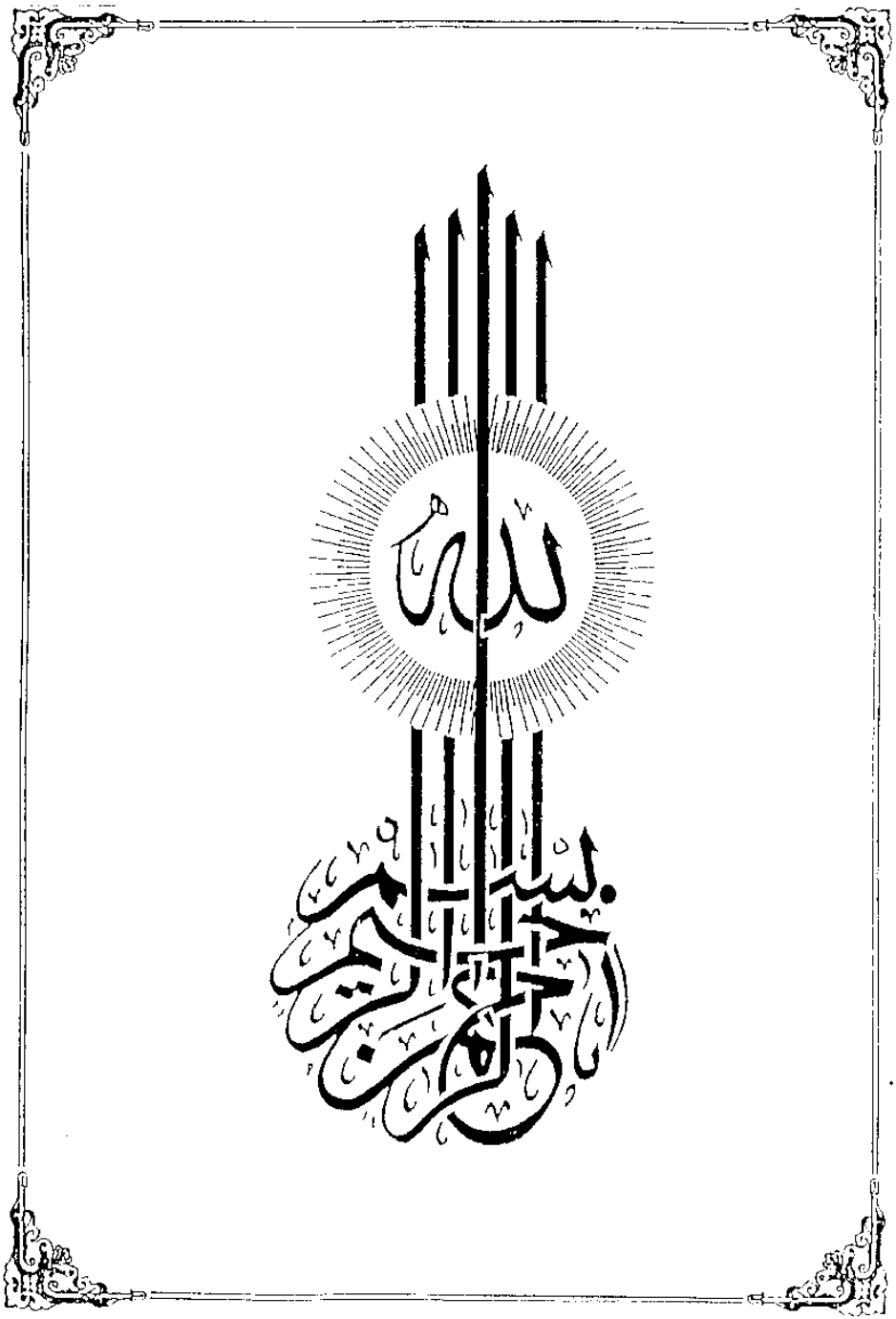

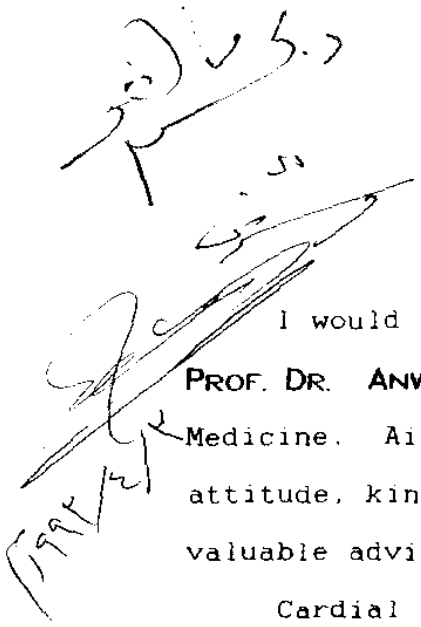

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INTRODUCTION:

Ascites is a common clinical problem in egypt. Among the common causes are chronic liver disease and malignant neoplasms Differentiation between malignant ascites and that resulting from liver cirrhosis is a frequent clinical problem. Various laboratory tests has Been used for this purpose But non of these Tests was completely satisfactory (Boyer et al., 1978;

Ascitic fluid parameters valuable for differentiation between the two conditions have long been sought. Cytological examination which is specific has been found unreliable in many cases due to high percentage of false-negative results (Tomb, 1974).

Ascitic fluid total protein has been used widely as a laboratory test in this differential diagnosis. However high protein content of Ascites, although a consistent finding in malignant Ascites, has been reported in up to 25% of patients with Ascites due to chronic liver disease (Sampliner and Iber, 1974).

Lipid analysis of Ascitic fluid has been performed only in a few studies demonstrating elevated

concentrations of cholesterol and total lipid in malignant ascites compared to ascites caused by chronic liver disease.

(Polak et al., 1978; Jungst et al., 1986 and Prieto et al., 1988).

Other parameters such as ascitic fluid lactate dehydrogenase, carcinoembryonic antigen or fibrinogen degradation products have been investigated but a complete separation between both types of ascites based on these parameters has not achieved (Jungst et al., 1986).

Recently ascitic fluid Alpha- 1- antitrypsin have drawn attention of being highly sensitive in this respect (Villamil et al., 1990).

Aim Of The Work

The aim of the present work is to study the value of ascitic fluid cholesterol and ascitic fluid Alpha- 1- antitrypsin as a discriminative parameters between malignant and cirrhotic ascites.

REVIEW OF THE LITERATURE

ASCITES

DEFINITION

The term ascites is derived from the greek ward "askites" meaning bladder or bag . It refers to accumulation of free fluid within the peritoneal cavity (Wyllie et al., 1980).

It is most frequently due to cirrhosis, but there are numerous other causes. and it can not be assumed that the presence of ascites is indicative of cirrhosis (Boyer, 1985).

CAUSES OF ASCITES:

The clinical diagnosis of ascites is an easy task but the aetiological diagnosis is occasionally a difficult proplem. Liver diseases remains the most common cause of prominent ascites, malignancy, congestive heart failure, tuberculosis and chronic pancreatitis are other important possibilities. Bilharziasis is the most common cause of ascites in Egypt (Abdel Ghaffar and Shoeb, 1962).

Ockner in (1982) classified the causes of ascites

V- Dermoid cyst

VII Miscellaneous

- Eosinophilic gastroenteritis
- whipple's disease
- Splenosis
- Sclerosing peritonitis
- peritoneal lymphangictesia.

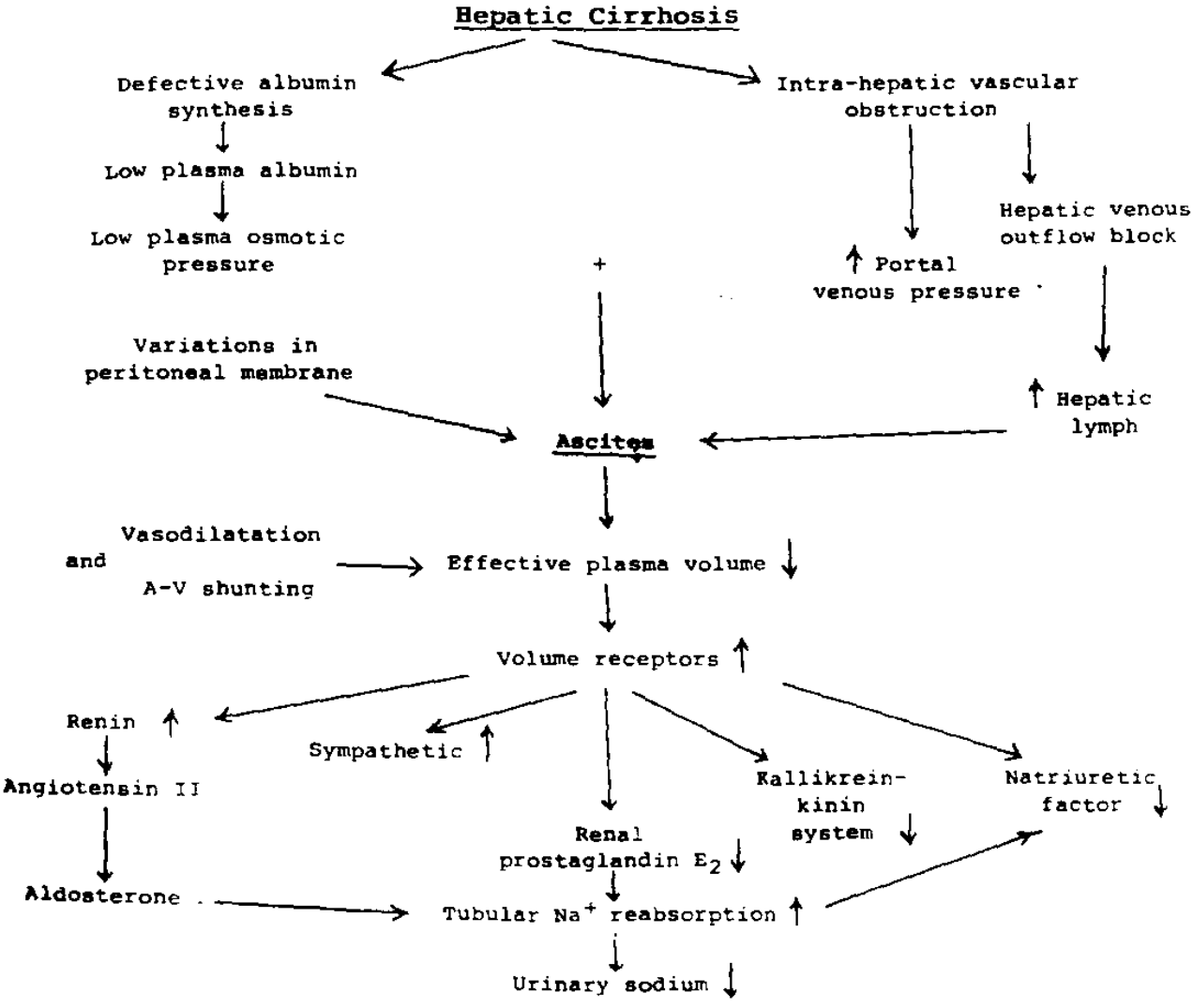

Figure (1). The possible mechanisms of ascites formation in cirrhosis.

(Quoted from Sherlock, 1989).

1) Local Factors:

A- Hypo albuminemia :

In cirrhosis, albumin synthesis is decreased. in many instances, osmotic pressure provides an accurate discriminative between those with cirrhosis and ascites and those without (Sherlock, 1989). However, many cirrhotic patients with hypoalBuminaemia have no Ascites. Peripheral oedema is a far More common consequence of hypoalbuminiemia than ascites (Conn, 1982).

b- Portal Hypertension:

Normally, the higher hydrostatic pressure at the arterial end of a capillary favours the passage of protein- free fluid into the pericapillary space. At the venous end of capillary, where the Hydrostatic pressure is lower than the osmotic pressure and lower than the extravascular tissue pressure, reabsorption take place. In the most simplist sense, the Advanced cirrhotic patient with portal hypertension has increased intravascular hydrostatic pressure (Portal Hypertension) and decreased vascular osmotic pressure (Hypoalbuminaemia), a combination of Abnormalities which favour the loss of fluid into extravascular space (the

peritoneal cavity).

Many cirrhotic patients with portal Hypertension do not have Ascites (Conn, 1982).

Patient with Obstructed portal vein But a normal liver rarely suffer from Ascites unless there is a coincidental gastro-intestinal haemorrhage or if for some other reason the plasma. Protein level falls (Sherlock, 1989). However portal Hypertension and Hypoalbuminemia sometimes occur together without Ascites (Conn, 1982).

The portal Hypertension serves to localize the fluid retention in the peritoneal cavity rather than in the peripheral tissue (Sherlock, 1988).

c- Increased Hepatic Lymph production:

Evidence for an increased production of Hepatic lymph in cirrhosis includes reports that lymphatics in the hilum of the liver are characteristically distended (Bagenstoss and Caom, 1957) and the flow of lymph within the thoracic duct is Markedly increased (Witte et al., 1969). In cirrhosis, Obstruction to hepatic blood flow by regenerating nodules on hepatic veins produces apost

sinusoidal obstruction and increased hepatic lymph production. Some of the hepatic lymph enters the. ascitic fluid particularly when the transport capacity of the hepatic lymph system is exceeded (Sherlock, 1989).

II) Renal Changes:

A- Sodium Retention:

Sodium retention is the commonest renal abnormality in cirrhotic patients with ascites and it plays a critical role in the pathogenesis of Ascites.

Ascites disappears in most cirrhotic after inhibiting renal sodium retention with diuretics despite portal hypertension and other splanchnic circulatory abnormalities remaining unchanged. Conversely., diuretic withdrawal and/or administration of high-sodium diet determine the reaccumalation of ascites in these patients (Pecikyan et al., 1967).

The mechanism of avid renal sodium retention in cirrhosis is controversial. Two theories have emerged to explain this phenomenon:

* First, the classic "underfill" theory proposes that the