

## تقييم الحالة الغذائية لمرضى تليف الكبد المصابين بدوالي المرء

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## المستخلص :

مرض دوالى المرء قد يحدث نتيجة لتليف الكبد والهدف الاساسى من هذا البحث هو تقييم الحالة الغذائية وقد تم اختيار العينه عشوائيا من مستشفيات مختلفه بالقاهرة واكثر العينات تحديدا كانت من مستشفى أم المصريين والتي تشكلت من ٧٥ مريض وقد قسمت الى (٥٤) ذكرا و(٢١) انثى واعمارهم تتراوح من ٣٧ الى ٧٨ عام أخذت بيانات من كل حاله القياسات الانثروبوميترية (الطول -الوزن - مؤشر كتلة الجسم - العمر) استمارة التحاليل الغذائية (للعناصر الكبرى - المعادن - الفيتامينات) واستمارة الفحوص الطبيه والمعملية ومعرفة درجة الدوالى وعمل الحقن وكذلك عدد مرات الربط للدوالى وايضا معرفة جنس المرضى سواء كانوا ذكور او اناث وتم تحديد وزن وطول المشتركين فى الدراسه وحساب دليل كتلة الجسم وكذلك قياس الطول والوزن لكل المرضى موضع الدراسه عن طريق المقابلات الشخصيه ثم قام المشتركون بتحرير الاستبيان والذي كان يحتوى على الاستمارات السابق ذكرها وقد تم تسجيل ومتابعة التحاليل الطبيه للمرضى الموجودين من واقع الملفات الطبيه لهم وكذلك المرضى المترددين من المتابعه الدورية لهم بالعياده الخارجيه وذلك لتحاليل الهيموجلوبين والصفائح الدمويه وكرات الدم البيضاء ومعدل السيولة وقد تم قياس وتحليل الوجبات للمرضى جميعا وكذلك استرجاع غذاء ٢٤ ساعه لمدة ثلاث ايام متتاليه وتحليلها تحليلا احصائيا .

الكلمات المفتاحية: دوالى المرء - تليف - درجة الدوالى - ربط

ملخص النتائج: تم تحليل بعض العناصر معمليا مثل الهيموجلوبين وكرات الدم الحمراء والبيضاء ووظائف الكبد والكلى وتحليل السكر الصائم والفاطر وتم اخذ القياسات الانثروبوميترية ومؤشر كتلته

الجسم والطول والوزن وكذلك تم تسجيل تقارير المناظير من داخل وحده المناظير الخاصة بالجهاز الهضمي والكبد .

## EVALUATION OF THE NUTRITIONAL STATUS OF PATIENTS WITH ESOPHAGEAL VARICE

### Abstract:

This research was conducted on patients with esophageal varices, which may occur as a result of cirrhosis of the liver, and the main objective of this research is to assess the nutritional status of these patients. Fifty four male and (21) female, and their ages ranged from 37 to 78 years Data were taken from each case, anthropometric measurements (height - weight - body mass index - age) nutritional analysis form (for major elements - minerals - vitamins) and medical examination form a laboratory, knowledge of the degree of varicose veins and injection work, as well as the number of times of ligation of varicose veins, as well as knowing the gender of patients, whether they are male or female. Then the participants edited the questionnaire, which contained the aforementioned forms. The medical analyzes of the existing patients were recorded and followed up from the reality of their medical files, as well as the patients who hesitated from the periodic follow-up to them in the outpatient clinic for hemoglobin, platelets, white blood cells and fluidity rate. Meals were measured and analyzed For all patients, as well as food recovery 24 hours for three consecutive days and analyzed statistically.

**Keywords:** esophageal varices - cirrhosis - degree of varicose veins – banding

### Summary

This study is about patients with esophageal varices that may occur as a result of cirrhosis

The sample was chosen randomly from different hospitals in Cairo, and the most specific samples were from a hospital And a questionnaire for assessing the economic and social situation, a form for dietary habits, and a form for health history

Body measurements questionnaire, food consumption pattern form, medical and laboratory examination form

And a 24-hour retrieval form and a form for collecting the meals that were eaten.

(BMI) The weight and height of the study participants were determined and the body mass index was calculated

As well as measuring the height and weight of all patients under study through personal interviews.

## Introduction

Esophageal varices are dilated submucosal distal esophageal veins connecting the portal and systemic circulations. This happens due to portal hypertension (most commonly a result of cirrhosis), resistance to portal blood flow, and increased portal venous blood inflow. The most common fatal complication of cirrhosis is variceal rupture; the severity of liver disease correlates with the presence of varices and risk of bleeding (Yoon H, Shin HJ et al),(2019).

The portal vein has a circulation of over 1500 ml/min of blood and if there is an obstruction, this results in elevated portal venous pressure. The response of the body to the increased venous pressure is the development of collaterals. these portosystemic collaterals divert blood from the portal venous system to the inferior and superior vena cava. At the same time, one important system is the gastroesophageal collaterals that drain into the azygos vein and lead to the development of esophageal varices. When these varices get enlarged, they rupture producing severe hemorrhage. Bleeding from esophageal varices is the third most common cause of upper GI bleeding, after duodenal and gastric ulcers( Nery F, Correia Sat al),(2019).

## Etiology

Causes of portal hypertension:

- Prehepatic: Portal vein obstruction (EHPVO) or massive splenomegaly with increased splenic vein blood flow
- Posthepatic: Severe right-sided heart failure, constrictive pericarditis, and hepatic vein obstruction (Budd-Chiari syndrome)

- Intrahepatic: Cirrhosis accounts for most cases of portal hypertension.

Less frequent causes are schistosomiasis, massive fatty change, diseases affecting portal microcirculation as nodular regenerative hyperplasia and diffuse fibrosing granulomatous disease as sarcoidosis.[ **Nigatu A, Yap JE,**](2019).

Other rare causes of portal hypertension include:

- Wilson disease
- Alpha-1 antitrypsin deficiency
- Primary biliary cirrhosis
- Tuberculosis
- Constrictive pericarditis

## Epidemiology

### Incidence

- At diagnosis, 30% of cirrhotic patients have varices which increase to 90% in 10 years.
- The 1-year rate of first variceal bleeding is 5% for small varices, 15% for large varices.

Portal hypertension is common in chronic liver disease (CLD) in children.

### Prevalence

- It is more common in males than in females. Fifty percent of patients with esophageal varices will experience bleeding at some point.
- Variceal bleeding has a 10% to 20% mortality rate in the 6 weeks following the episode.

In the West, the two common causes of portal hypertension are alcohol and viral hepatitis. In Asia and Africa, the most common causes of portal hypertension include schistosomiasis and hepatitis B/C (**Chakinala RC, Kumar A et al,**)(2019).

## Symptoms of esophageal varices

Most people do not know they have esophageal varices until the varices start to bleed. When bleeding is sudden and severe, the person vomits large amounts of blood. When bleeding is less severe, the person may swallow the blood, which can cause black, tarry stools. If bleeding is not controlled, the person may develop signs of shock, including pale, clammy skin, irregular breathing and loss of consciousness ( **Zampino R, Lebano R et al.**)(2018).

## SUBJECTS AND METHODS

This study was surveyed at the om Al Masryeen Hospital in Giza, tropical medicine section and clinic, by questionnaire (appendix), nutritional sheets, anthropometric measurements, laboratory investigations, follow up, clinical evaluations and data at of patients, the minus of food (Appendix) for the house served at orders of physicians according to the cases. The food of patients and minues were analysed at National Institute of Nutrition using Counter program for nutrients of Ready to Eat Egyptian Food Version 1, in the Unit of Statistics and Food Analysis.

To evaluate the results of macronutrients, minerals and vitamins, tables.

### Study sample:

A total sample of 75 members enrolled in this study. Study sample included of only esophagus varicose and cirrhosis subjects based on body mass index (BMI). Participants between visitors of Internist Department, om Al Masryeen Hospital in Giza .

### Instrumentation:

The instrumentation of this study consisted of a structured interviewing questionnaire of different forms: The first was to elicit the socio – economic status of studied members. The second was to collect data about the health of study sample. The third was to find out the moving activity. The forth was about the food habits and diet history. The fifth was the anthropometric measurement. The sixth was for 24 hours Food Recall method which was reported for to 3 days. For 24 – hours recall Participants asked to recall everything they ate within last 24 hours ( previous day ).

Assessment of nutrient intake from food consumption data: Nutrient value of derived from food assessed at, om Al Masryeen Hospital in Giza, using the Counter Program for Nutrients of Ready to Eat Egyptian Food – Version 1, in the unit of statistics and Food Analysis.

To evaluated results of other macronutrients (protein, fat and carbohydrates), minerals and vitamins tables

### Laboratory evaluation:

It was measured number of red blood cells (RBC's x 10/ML), hemoglobin (HB,g/dl), platelet count(Pltx10/ML), white blood count WBC(g/dl) and (PTT,PC) per sec and the use of endoscope results.

As for BRC there was decrease of values above normal (4.5-6.5) mm<sup>3</sup> with significant variations between both patients of mean values 3.41, respectively.

### Result and discussion

Table (1): Anthropometrics measurements( Height and weight , age, body mass index) for Patients esophageal varicose

parameter	Min	Max	Mean	Std±
(cm) Height	158	201	180.6	14.46
(kg) Weight	65	130	93,4	17.43
(kg/ meter)BMI	26	53.8	33.8	8.93
(y) Age	37.00	78.00	58.25	10.75

table (1) shows As regard mean height, there were increase of values over 201, with variations between patients. As regard means Weight, there was increase of values over 93.4, with variations between patients. As regard mean BMI, there were increase of values over 33.8, with variations between patient. As regard mean age, there were increase of values over 58.25, with variations between patient.

**Table (2) food analysis for patients as regards mean macronutrients of diet for Patients esophageal varicose**

	Min	Max	Mean	Std±
Protein (gm) animal	16.60	22.60	39.2	3.75
Protein Plant(gm)	18.80	36.2	55	3.61
Total protein(gm)	35.4	58.8	94.8	7.36
Fat Animal(gm)	10.20	21.2	31.4	4.010
Fat Plant(gm)	8.30	16.7	25	4.95
Total fat(gm)	18.5	37.9	56.4	8.96
Carbohydrates (gm)	244	400	322	1.47
Ash(gm)	.24	3.92	1.47	1.05
Fiber(gm)	.10	6.90	1.11	1.62

This table (2) shows the total protein 94.8 gm the Protein A 39.2 gm and Protein P 55 gm. Total fat 56.4 (gm) the fat A 31.4 gm and Fat P 25 gm. the Carbohydrates of Recommend dietary Allowances increased above normal and had variation between patients with values 322 respectively. Ash is 1.47 and fiber 1.11gm.

**Table (3): minerals of the diet for Patients esophageal varicose**

	Min	Max	Mean	Std±
Calcium (mg)	5.0	286.0	50.21	5.94
Phosphorus( mg)	10	522	175.34	1.71
Iron	2.40	63.30	12.2	9.19

Animaml( $\mu$ g)				
Iron P( $\mu$ g)	8.10	20.20	26.6	1.85
Total Iron( $\mu$ g)	13.70	18.60	38.9	2.05
Sodium(Mm)	2.5	350.0	67.28	9.47
Potassium(Mm)	36	1213	297.06	29.03
Zinc(gm)	.02	14.40	1.95	3.47
Magnedium(gm)	4.8	148.0	35.57	3.56

table (3) shows There was a decrease in the percentage of calcium than the normal range (1200 mg / day) and there were significant differences in the calcium content in the diet associated with DRI between both patients with an average value of 50.21 with statistically significant differences between males and females in both patients.

There was an increase in normal phosphorus (700 mg/day). There were significant differences in the DRI-related phosphorous content of the diet between both patients with an average value of 175.34, with statistically significant differences between males and females in both patients.

There were increase of Iron A above normal (8g/d) there were significant variations of Iron A content of the diet related to DRI between both patients with mean value 12.2 with statistically significant variations between males and females in both patients.

As for plant Iron/d there were increase above 50% of normal (8g/d) and significant variations between patients of mean value 26.6 mg/d with no statistical difference between males and females between patients.

- The total Iron content of diet related to DRI had significant variations between patients with mean value 38.9 for patients.



The sodium content of the diet related to the DRI for cirrhosis (2g/d) had two significant differences between patients with an average value of 67.28 with a statistical difference between males and females between patients.

There was an increase in the amount of potassium intake in the diet, and the proportion of potassium in the diet associated with DRI (N = 4.7 mg/d), there were significant differences between patients with an average value of 297.06 and statistical differences between males and females among patients.

There was a decrease in zinc intake in the diet above the DRI (10 mg/d), with significant differences in zinc content in the DRI-related diet between patients with a mean value of 1.95 and a statistical difference between males and females among patients.

-There was an excess of magnesium above the normal range (400 mg/day) There were significant differences in the magnesium content of the diet associated with DRI between both patients with an average value of 35.57 with statistically significant differences between males and females in both patients.

**Table (4) vitamins content of diet for Patients esophageal varicose**

	Min	Max	Mean	Std±
Vitamin. A(μg)	10.0	680.0	230.81	23.1
Vitamin .C(μg)	.8	98.4	12.72	1.84
Vitamin.B1(μg)	.01	.76	.18	.19
Vitamin.B2(μg)	.02	2.10	.27	.45

table (4) shows As for vitamin A% content of diet to DRI values decrease (N=800mg/d), there were variations between patients with mean 230.81 there were no statistical variations between females and males in patients, This vitamin is very danger on the liver healthy because this storage in the liver.

- Vitamin (C) content of the diet related to DRI values there was increase (N=90 mg/d) and had variations between patients with mean 12.72 with statistical difference between males and females in patients. Vitamin B1 % content of the diet related to DRI, there was decrease (N=1.2mg/d) and had variations between patients with mean values .18 of patients.
- As for vitamin B2% content of the diet in related to DRI there was decreased (N=1.2mg/d). There were variations between both of patients mean value .27 with statistical variations between patients

**Table (5) medical analysis (CBC) for patient esophageal varicose**

	min	max	STd
Hb gm/dl	6.80	16.20	mean 1.61
RBC gm/dl	2.00	4.90	10.53 .88
WBC cmm	2.30	12.50	3.41 2.48
PTT- PT (sec)	12.40	91.00	5.10 14.40 52.57

- table (5) shows As for Hb there were decrease of values above normal (12-18) gm/dl with no variations between both patients of mean values 10.53 respectively. iron overload as well as iron deficiency anemia are common clinical findings in these patients. Variceal bleeding is also a common complication.
- As result BRC, there was decrease of values above normal (4.5-6.5) mm<sup>3</sup> with variations between both patients of mean values 3.41 respectively.
- As for WBC, there were of values between normal ranges (4.0-11.0)cmm with no variations between both patients of mean values 5.10 respectively.
- As result PTT- PT, there was increase of values above normal (25.0-33.0) sec with variations between both patients of mean values 52.57 respectively.

### **Evaluation of the patient by an upper optical endoscope of the stomach and esophagus after haematemesis**

**Table (6): varicose –veins degree for Patients esophageal varicose**

	Frequency	Percent %
<b>varicose –veins degree</b>		
3.00	48	64.0
4.00	27	36.0
Total	75	100.0
<b>injection work</b>		
yes	50	66.7
no	25	33.3
Total	75	100.0
<b>Banding number</b>		
3time	36	48.0
4time	18	24.0
5time	1	1.3
6time	3	4.0
7time	1	1.3
8time	1	1.3
9time	1	1.3
no	14	18.7
Total	75	100.0
<b>sex</b>		
male	54	72.0
female	21	28.0
total	75	100.0

table (6) shows As for the degree of varicose veins, there were differences between patients, as 48 of the patients were determined to have varicose veins as being of the third degree and 27 patients for whom the degree of varicose veins was determined to be of the fourth degree.

Varicose veins were injected into 50 of the patients, while 25 patients did not receive injections As for the number of ligation, it was 36 patients who were ligated 3 times and 18 patients were ligated 4 times, one patient was ligated 5 times, and it was also found that there are significant differences between patients, As for the gender of the participants, they were 54 males and 21 females

### recommendations

Patients are suggested to have a soft diet—naturally soft foods that includes ripe banana, egg, and cooked food—in order to prevent veins from rupturing. Soft foods are easy to swallow or chew and also help in a fast digestion process

## Maintaining Healthy Diets

Maintaining a good diet is essential for prevention of cirrhosis of the liver. Diets that include plant-based foods such as a variety of vegetables and fruits are the best option. Also, one should lower the intake of fat and other foods that are responsible for the build-up of cholesterol.

Patients are suggested to have a soft diet—naturally soft foods that includes ripe banana, egg, and cooked food—in order to prevent veins from rupturing. Soft foods are easy to swallow or chew and also help in a fast digestion process.

Patients should avoid food such as taco shells, hard vegetables like carrots, raw fruits, etc., which might cause tearing of the veins. Food that helps in digestion, such as insoluble fibers, should be consumed in order to reduce the risk of constipation. Rupturing of the esophageal varices may happen due to straining and constipation.

It is recommended to have five small meals a day. A highly nutrient breakfast would include oatmeal along with prune juice. Bananas along with low fat food like yogurt can be taken as the mid-morning meal.

Lunch could be chicken, beans, etc., and in the mid-afternoon, a glass of milk along with salt crackers. For dinner, the menu could be fish along with potato.

This is an example of a properly planned diet for a patient, which is important for a patient with esophageal varices.

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