

## Effect of Spontaneous Bacterial Peritonitis in Hepatic Patients on the Nutritional Status of the Patient

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### Abstract:

This study for patients with peritoneal membrane (SBP), which may occur as a result of hydrocephalus ascites output From cirrhosis of the liver has sample was randomly selected from different hospitals in Cairo and more specifically samples Was one of the Dar Al Shifa Hospital Abbasia, which was formed from the 100 patients were divided into (72), male And (28) female and aged from 37 to 87 year data were taken from each case included form Personal data and the evaluation form economic and social situation and form eating habits The health history form and Astmarhalmqas physical form and pattern of food consumption and form Medical examinations and laboratory and form retrieval 24 hours and form assembly diets that have been addressed.

(BMI) was to determine the weight and length of the participants in the study and calculate body mass index (BMI) As well as measuring the height and weight of each patient into the study through personal interviews and then the Subscribers liberalization of the questionnaire, which was contained on the forms mentioned above have been recorded And follow-up medical tests for patients who are from the reality of their medical files, as well as patients undecided Continue rotating them from the outpatient clinic and to analyzes of hemoglobin and hematocrit and platelets Bilirubin and blood and liver enzymes and blood thinners and the rate of urea and creatinine and uric acid Has been measured and analyzed meals for all patients, as well as retrieval of food for 24 hours for two consecutive days And analyzed statistically.

**Key words:** (SBP)spontaneous bacterial peritonitis- ascites- liver enzymes- cirrhosis.

**تأثير الإصابة بالتهاب الغشاء البريتوني لمرضى الكبد على الحالة الغذائية للمريض****الملخص:**

هذه الدراسة عن المرضى المصابين بالتهاب الغشاء البريتوني الذى قد يحدث نتيجة للاستسقاء الناتج عن تليف الكبد وقد تم اختيار العينة عشوائيا من مستشفيات مختلفه بالقاهرة واكثر العينات تحديدا كانت من مستشفى دار الشفاء بالعباسيه والتي تشكلت من ١٠٠ مريض وقد قسمت الى (٧٢) ذكرا و(٢٨) انثى واعمارهم تتراوح من ٣٧ الى ٨٧ عام وقد أخذت بيانات من كل حاله شملت استمارة البيانات الشخصيه واستمارة تقييم حاله الاقصاديه والاجتماعيه واستمارة العادات الغذائيه واستمارة التاريخ الصحى واستمارة المقاييس الجسميه واستمارة نمط الاستهلاك الغذائى واستمارة الفحوص الطبيه والمعملية واستمارة استرجاع ٢٤ ساعه واستمارة تجميع الوجبات الغذائيه التى تم تناولها.

(BMI) وتم تحديد وزن وطول المشتركين فى دراسته وحساب دليل كتلة الجسم وكذلك قياس الطول والوزن لكل المرضى موضع الدراسه عن طريق المقابلات الشخصيه ثم قام المشتركون بتحرير الاستبيان والذى 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 والهيماتوكريت والصفائح الدمويه والبيوروبين وانزيمات الكبد و معدل سيوله الدم والبولينا والكرياتين وحامض البوليك وقد تم قياس وتحليل الوجبات للمرضى جميعا وكذلك استرجاع غذاء ٢٤ ساعه لمدة يومين متتاليين وتحليلها تحليلا احصائيا.

**الكلمات المفتاحية:** التهاب الغشاء البريتونى-استسقاء-انزيمات الكبد-تليف

## Introduction

The liver is the largest gland of the human body and plays a central role in the metabolism of nutrient. Hundreds of biochemical reactions take place in the liver, explaining its susceptibility to metabolic Stressors. However, the natural history of metabolic liver disease has started to be unraveled only Recently. For instance, it is now known that nonalcoholic fatty liver disease (NAFLD), which has long been considered a benign and non specific response of the liver to different inflammatory and metabolic factors, can progress to fibrosis and cirrhosis when associated with .The burden of NAFLD goes in parallel with the burden of obesity and type 2 diabetes, so that NAFLD is currently considered the hepatic manifestation of the metabolic syndrome. More importantly( Scaglioni F, Ciccia S 2011), (NAFLD is emerging as an independent redactor of cardio metabolic disease and liver-related and general mortality,( Vernon G, Baranova A,2011) fatty liver (FL) may progress to fibrosis and cirrhosis in alcoholic liver disease(ALD; left panel) and in nonalcoholic liver disease (NALD; right panel). Fibrosis leading to cirrhosis can accompany any chronic liver disease(CLD)associated with hepatobiliary distortion and/or inflammation. The main causes of cirrhosis,( Anstee QM, 2011) and hepatocarcinoma(HCC) worldwide are presently hepatitis B (HBV) and C (HCV) virus infections( Te HS, Jensen DM,2010) Alcohol consumption is another important cause of CLD at present but may be a less important risk factorin coming years. Indeed, the great burden of CLD in forthcoming years is expected to come from NAFLD and especially from its progressive form known as nonalcoholic steatohepatitis (NASH). (Marino M, Bedogni G, Bellentani S. 2011).

## Aim of STUDY

The main of this study is to investigate the patient of liver disease and the nutritional status of patients.

1. Effect of spontaneous bacterial peritonitis in hepatic patients on the nutritional status of the patient.
2. Determination the medical and laboratory examinations before and after administration.
3. .Evaluating the nutritional status of liver patients.
4. .Statically analysis of data using appropriate methods.

## **SUBJECTS AND METHODS**

### **Study sample:**

A total sample of 100 members enrolled in this study. Participants divided into females (50 members) and males (50 members), their ages were 27-37 years (females & males). Study sample included of only Spontaneous bacterial peritonitis (SBP) And ascites subjects based on body mass index ( BMI ). Participants were of the visitors of Internist Department, Dar El –Chifa Hospital, Cairo.

### **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 days one of them in 2 day. 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, Dar El –Chifa Hospital, Cairo using the Counter Program for Nutrients of Ready to Eat Egyptian Food – Version 1, in the unit of statistics and Food Analysis.

To evaluate results of total kcal, **DRI ( 2007 )** Equation

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

**Dietary Reference Intake ( DRI ) ( 2002 )** were used.

### **Anthropometric measurements:**

The anthropometric measurements were carried out as described by **Jelliff** ( 1966 ) for body weight, body height, body mass index (BMI),

### **Biochemical analysis:**

- \* Determination of serum Albumin was carried out according to method described by blood analysis.
- \* Determination of creatinine in serum carried out by the method of.
- \* Determination of urea in serum was carried out as described .
- \* Determination of uric acid was determined by the method .
- \* Determination of total bilirubin was carried out as described.
- \* Determination of AsT and ALT was assessed as described.
- \* Hemoglobin determination was carried out as described.
- \* (PC) and (PT)was determined according.

**Haematological parameters:**

Haematological parameters " Complete Blood Picture " (WBC, RBC, PPT, HGB, TLC,) were determined in the Laboratory of the , Dar El –Chifa Hospital, Cairo.

**Statistical analysis:**

Results were expressed as mean  $\pm$  SD by using SPSS, PC Statistical Software ( Version 10, SPSS INC, Chicago, USA ) in the Unit of Statistical and Food Analysis, Faculty of Home Economics, Minufiya University ( Shebin El – Kom).

**Results and Discussion****Table (1): Questionnaire about the Diagnosis and Sex**

Frequency	Number	Percent
<b>Diagnosis</b>		
Cirrhosis of the liver and abdominal ascites	18	18%
Nephrology and Stones	9	9%
Blood Sugar	22	22%
Virus liver	9	9%
Bilharzia	3	3%
Respiratory diseases	3	3%
The Heart and Blood Vessels	10	10%
Spontaneous Bacterial Peritonitis	4	4%
Diseases of the Gastrointestinal System	11	11%
Other	11	11%
Total	100	100%
<b>Gender</b>		
Male	72	72%
Female	28	28%
Total	100	100%

This table shows the relationship between the other associated diseases of inflammatory disease spontaneous bacterial peritonitis Found that 18% of patients infected with ascites in abdominal. and 22% of patients infected with the sugar in the blood. 9% of patients infected with viruses in the liver.3% of patients infected Bilharzia.10% of patients infected heart disease. 4% of patients infected spontaneous bacterial peritonitis. 11% of patients infected diseases of the gastrointestinal system. This study included 72 male and 28 female.

**Table (2): Questionnaire about the Economic and Social Situation**

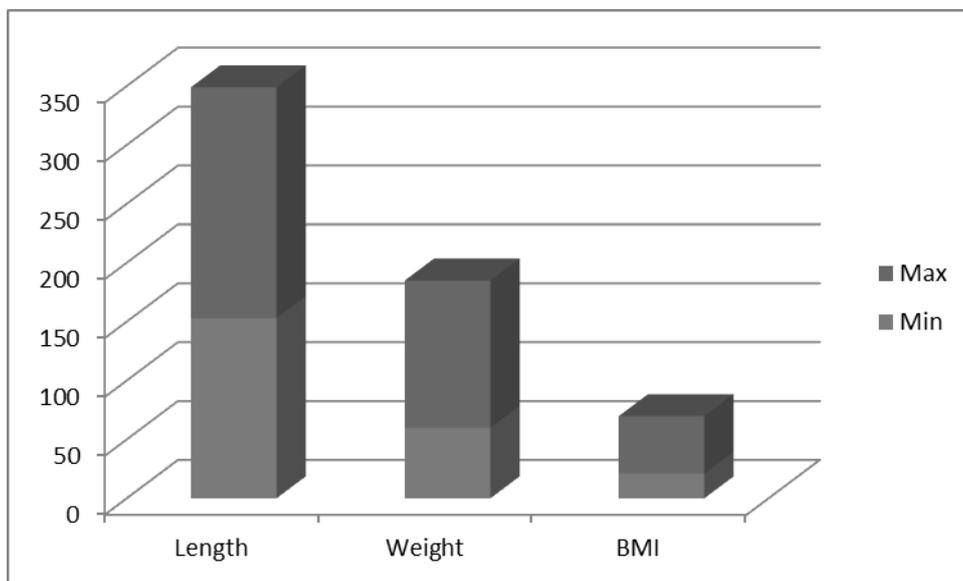
<b>Marital Status</b>		
Married	69	69%
Widower	28	28%
Absolute	3	3%
Total	100	100%
<b>Residence</b>		
Reeve	28	28%
Attended	72	72%
Total	100	100%
<b>Accomodation</b>		
Rent	29	29%
King	71	71%
Total	100	100%
<b>Number of rooms home</b>		
Two rooms	24	24%
Three compartments	65	65%
Four compartments	11	11%
Total	100	100%
<b>Per capita income</b>		
Housewife	24	24%
Less than 1,000 pounds	22	22%
More than 1,000 pounds	54	54%
Total	100	100%
<b>Educational Status</b>		
Illiterate	11	11%
Reads and writes	30	30%
Average education	38	38%
Qualified high	21	21%
Total	100	100%

Found that 69% of cases married and 28% are widower 3% absolute. 28% of the cases live in Reeve and 72% live in attended . 29% of the cases live in rent and 71% live king. 24% of the cases have two rooms,

and 65% have three rooms, and 11% have four room. 24% of the cases, housewives and 22% salary less than 1,000 pounds, and 54% higher salary than 1,000. pounds 11% of the cases are illiterate and 30% reads and writes, and 38% and the average education.

**Table (3):length and weight and body mass index.**

	N	Min	Max	Mean	Std±
Length	100	153.00	196.00	175.6800	9.46859
Weight	100	60.00	125.00	88.4400	12.43270
BMI	100	21.00	48.80	28.8132	3.93683



Fig(1): comparison between Length and Weight as regard mean BMI

As regard mean Length there were increase of values over 196, with no significant variations between patient and increased mean values of 175.6 respectively. As regard mean Weight there were increase of values over 125, with no significant variations between patient and increased mean values of 88.4 respectively. As regard mean BMI there were increase of values over 48.80, with no significant variations between patient and increased mean values of 28.8 respectively.

**Table (4): Comparison of patients as regards laboratory results.**

	N	Min	Max	Mean	Std±
AST	100	30.00	99.00	53.8140	13.21721
ALT	100	12.00	74.00	40.9200	18.81737
SERUM.UREA	100	10.50	137.00	45.8040	18.26908
TLC	100	2.60	14.00	8.0407	4.03500
WBC	100	2.60	14.00	8.1415	4.02179
ALBUIMIN	100	1.10	19.00	2.3697	1.91453
TOTAL.BILLIRUBIN	100	.30	17.00	3.4482	4.12723

For SGOT there were no variations between patients and increased values above normal (30-40 u/l) with values 70.41, 73.37 ul respectively. As regard mean SGPT There were no significant differences between patients with values 51.03, 57.57 u/l Respectively. Albumin values decreased and had significant variations between patient With mean 2.3g/dl , 3.35g/dl respectively.

**Table (5): Comparison Between patients as regards mean macronutrients % of diet in relation to DRI**

	N	Min	Max	Mean	Std±
calories	100	2555.00	8349.00	4307.8200	1119.46346
DRI	100	95.50	439.40	208.4680	60.39633
ProteinA	100	13.60	168.90	85.6040	34.54536
ProteinP	100	19.80	243.90	74.2270	33.13277
Totalprotein	100	72.97	335.80	159.8337	45.88885
DRIP	100	128.60	576.20	300.4990	89.13759
FatA	100	14.20	523.50	94.1970	61.07594
FatP	100	5.30	244.00	70.2490	46.55329
Totalfat	100	56.60	551.30	164.9830	66.91466
Carbohydrate	100	241.60	1180.90	541.4510	144.36429

The total calories % of the diet related to DRI decreased and the mean total calories percentage of the diet related to DRI had no variations between patients with values 52.57%, 65.9% respectively. The carbohydrates % of the diet related to total calories Needs decreased below normal (55%) and had variation between patients with values 26.2 %, 29.52% respectively. There were no variations between patients related to DRI Of Proteins/d with mean 74.2 , 335.8 g/d for patients respectively. Also there were non significant variations between males and females of patients.

**Table (6): Comparison Between patients as regards mean minerals%of the diet with DRI:**

	N	Minimum	Maximum	Mean	Std±
Calcium	100	294 .20	8663.40	1367.1720	1185.82955
calcium.rda	100	36.80	1082.90	171.0980	148.31579
phosphorus	100	1388.70	7011.20	2701.7070	896.76530
phosph.rda	100	173.60	876.40	337.3490	111.96804
IronA	100	2.40	63.30	12.2020	9.19923
IronP	100	8.10	100.20	26.6990	18.50750
TotalIron	100	13.70	118.60	38.9010	20.54989
total.iron.rd	100	93.40	1153.80	366.7730	201.30013
Sodium	100	1409.20	11688.90	5034.6250	1838.72169
DRISodium	100	281.80	2337.80	1006.9230	367.74507
Potassium	100	2890.70	16329.70	4914.1590	1939.88517
DRIPotass	100	146.50	21194.60	824.4200	2217.95445
Zinc	99	9.10	331.10	25.8283	32.24934
DRIzinc	100	67.30	429.60	180.1600	71.00555
Magnedium	100	269.70	3311.50	827.9360	450.11331
DRIMagnedium	100	96.30	946.10	275.6200	142.12634

This table shows the metal taken from the navigator, such as calcium, phosphorus, iron, sodium, potassium, zinc, manganese, compared with dietary intake recommendations permitted (RDI)

**Table (7): Comparison Between patients as regards mean content %of diet in relation to DRI of vitamins.**

	N	Minimum	Maximum	Mean	Std±
Vitaim.a	100	163.60	40663.60	4575.8300	9510.90375
DRI.Vitaima	100	20.50	5036.30	528.0400	1081.15872
Viamin.C	100	1.10	380.30	117.7110	86.84517
DRI.VitamiC	100	1.80	633.80	196.1750	144.73391
Vitamin.D	100	.00	283.50	9.1340	29.38823
DRI.VitamicD	100	.50	5670.70	184.5260	588.98013
Vitamin.E	100	5.30	199.40	36.8810	34.81257
DRI.Vitamina.E	100	64.70	2480.10	436.2070	412.57861
Vitamin.B1	100	.90	11.90	2.6260	1.45773
DRI.VitaminB1	100	87.10	1086.40	243.3320	134.35978
Vitamin.B2	100	1.00	16.80	5.1090	2.87508
DRI.VitaminB2	100	54.80	1200.40	394.4500	227.67387
Vitamin.B6	100	.60	6.70	2.5330	.89240
DRI.Vitmain.B6	100	39.70	417.60	150.2200	56.21804
Vitamin.B12	100	.60	176.30	8.5040	19.84409
DRI.VitaminB12	100	28.20	8816.80	430.0730	991.64348

As for vitamin A% content of the diet in relation to DRI decreased. (N=800Mg/ d), There were no significant vitiations between patients with

median 20.4 %, 45.5% Respectively while there were significant intercategory variations between patients.

vitamin C% content of the diet related to DRI decreased (N=90mg/ d) had no significant variations between both categories and intercategory groups with median 21.55%,45.5% for patients respectively.

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