

Food Fallacy in Cirrhosis

Pages with reference to book, From 144 To 147

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Abstract

Irrespective of socio-economic groups one hundred cirrhotic patients of both sexes were studied for the evaluation of dietary practices in the management of liver cirrhosis. Ninety normals have also been taken as matched controls. Fat and proteins were grossly restricted in cirrhosis which resulted in significantly inadequate intake of calories (JPMA 35: 144, 1985).

Introduction

In cirrhosis of liver reduced assimilation, hepatic uptake, and storage of protein, carbohydrate, fat, minerals and vitamins results in depletion of liver and body nutrients. Therefore, an adequate diet with specific supplements is needed to repair damaged cells and to produce new hepatocytes in patients with active liver disease. In our country restriction of animal protein and fat practiced widely is based upon fallacious assumptions and may adversely affect the prognosis in this disease.

This study was undertaken to evaluate the dietary practices in the management of liver cirrhosis.

Material and Methods

One hundred cirrhotic patients (48 males and 52 females) were studied irrespective of their socio-economic group. Ninety normals (48 males and 42 females) mostly the relatives of these patients were taken as matched controls. The history of dietary consumption per week was recorded by recall methods in both groups then calculated from the "Nutritive value of foods"¹ to get the daily intake of different nutrients.

Results

The nutrient intake of patients and controls is shown in table I and II.

Table -I
Nutrient Intake of Controls and Patients
Age Group 20 - 50 Years.

Nutrients	M A L E		F E M A L E	
	Controls (36)	Cirrhotics (30)	Controls (28)	Cirrhotics (35)
Calories	2100	*** 1200	1520	*** 922
Total Protein (Gm)	64	*** 36.7	45	*** 28
Animal Protein (Gm)	17	*** 8	18	*** 7
Fat (Gm)	43	*** 18	49	*** 18
Carbohydrate (Gm)	346	*** 220	216	*** 153

* < .05 P value as compared to controls.

** < .01 P value as compared to controls.

*** < .001 P value as compared to controls.

Table – II
Nutrient Intake of Controls and Patients.
Age Group 51 and above Years.

Nutrients	M A L E		F E M A L E	
	Controls (12)	Cirrhotics (18)	Controls (14)	Cirrhotics (17)
Calories	1878	*** 1080	1530	*** 817
Total Protein (Gm)	156	*** 34	53	*** 25
Animal Protein (Gm)	18	** 9.7	20.8	*** 7
Fat (Gm)	42	*** 18	52	*** 12
Carbohydrate (Gm)	318	*** 188.6	226	*** 149

* < .05 P value as compared to controls.
 ** < .01 P value as compared to controls.
 *** < .001 P value as compared to controls.

Fat intake was grossly restricted in cirrhotics irrespective of age groups. Protein and caloric intakes were also very significantly low as compared to controls of the same age group. Consumption of animal protein by cirrhotics was almost half of that of controls.

Discussion

The restriction of cooking fat and animal protein irrespective of age and sex in patients with cirrhosis was due to the following fads and belief.

1. Hepatic fat is derived from dietary fat.
2. Hepatic injury can be produced by high fat diet.
3. Fat is poorly absorbed and tolerated in liver diseases.
4. Low fat diets are therapeutically effective in liver disease.

But these beliefs are nothing but fallacy because well controlled studies indicate that fat found in the liver is not identical to ingested fat. Fatty infiltration in cirrhosis is increased by addition of dietary fat only when given with low protein diet² which is deficient in choline. Moreover, infiltration of fat may occur in obese individuals or those with excessive weight gain due to high caloric diet.^{3,4} Therefore, dietary fat appears to be more related to its caloric value than to its hepatotoxicity. Increased fat intake prevents fatty infiltration of liver⁵ and enhances the removal of fat from the fatty liver.⁶⁻⁹

Only in obstructive jaundice fat absorption is impaired because of decreased bile secretion.^{9,10}

Medium-Chain-Triglycerides may be helpful in such cases.^{11,12} In all other cases dietary fat is well tolerated¹¹. It is observed that tolerance to high fat diet is better than low fat diet in cirrhotics,^{13,16} and therefore, liberal fat in the diet will produce more rapid return to normal.^{17,20}

Restriction of fat not only leads to low caloric consumption but also to the deficiency of essential fatty acids (EFA) and thus makes the patients more susceptible to infection.^{19,20} EFA deficiency reduces the protein utilization²¹ Patek and Post²² observed that hepatocytic swelling and foci of necrosis were greater in high carbohydrate treated group than in high fat group. Restriction of fat also limits the variety of protein containing foods such as meat, milk and eggs. Significantly lower intake of animal protein in this study is mostly because of restriction of fat. Fat restriction also limits intake of desserts such as cakes; pudding, custurd and ice cream. Therefore, meals become monotonous and unpalatable. Thus, the unvarying and unpalatable diet discourages the patients from maintaining adequate caloric intake. Our study also confirms this by showing very significantly low intake of calories in patients.

Adequate, caloric intake is most desirable in liver cirrhosis^{23,9,13} because continued low intake involves drawing upon of body protein and fat by catabolism which is more difficult to be metabolized by the diseased liver.^{24,26} Adequate fat in the diet also provides fat soluble vitamins as well as some fatty acids which are essential for the metabolism of fat soluble vitamins as well as to fight against infection. Adequate fat will help patients to consume adequate protein which if present the administration of large amount of fat will not produce liver damage^{17,18,27} but will improve the prognosis of the disease because deficiency of protein affects particularly organs concerned with the elaboration of proteins and protein containing enzymes. The liver shows extensive periportal fatty change due to dietary deficiency of protein^{28,29} Moreover, liver loses protein and gains water sharing in the generalised edema^{30,31} Water. A liberal protein intake offers protection in cirrhosis of the liver^{7,23} and is essential for the repair of hepatic cells and the formation of cholic or cholatic and other bile acids. Deficiency of some essential amino acids may produce hepatic necrosis and fibrosis^{31,34}

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