Original Research Paper

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General Medicine

A STUDY OF CLINICAL SPECTRUM OF PRECIPITATING FACTORS OF HEPATIC ENCEPHALOPATHY IN CIRRHOSIS OF LIVER

Dr.Shaik Syfulla Shariff MD., Assistant Professor of General Medicine, Kurnool Medical College, Govt. General Hospital, Kurnool.

Dr.K. Narasimhulu* MD., Professor & HOD of Medicine, Kurnool Medical College, Govt. General Hospital, Kurnool. *Corresponding Author

ABSTRACT Hepatic Encephalopathy (HE) is a complex, potentially reversible neuropsychiatric condition that occurs as a consequence of acute or chronic liver disease.[1] It is a well recognized clinical complication of cirrhosis of liver and the presence and prompt identification of well defined precipitating factors is extremely important in diagnosis and treatment of this fatal condition. In the management of patients with HE in cirrhosis of liver it is important to stage the encephalopathy into four clinical stages and then try to identify and treat the precipitating factors. In the presence of the precipitating factors the neurological deficits are usually completely reversible upon their correction and the prognosis is better if the precipitant can be treated.[2]

KEYWORDS :

Aims of the study:
This study aims at studying the clinical profile and the spectrum of precipitating factors of HE in cirrhosis of liver, hence identifying them and initiating the appropriate treatment can bring down the morbidity and mortality.

Objectives of the study
- To study the clinical profile of hepatic encephalopathy in chronic liver disease.
- To study the clinical spectrum of precipitating factors of hepatic encephalopathy in patients with cirrhosis of liver.

PATIENTS AND METHODS

Source of data:
The study was conducted in patients admitted to government general hospital, Kurnool, attached to Kurnool Medical College, Kurnool from January 2015 to September 2016. A total of 100 patients were taken up for this study.

Study design:
A Hospital based descriptive and prospective study.

Method of collection of data:
Patients admitted to the medical wards, manifesting with symptoms and signs of hepatic encephalopathy associated with cirrhosis of liver depending on their past medical records, clinical signs of cirrhosis liver and an unequivocal ultrasonography report were taken up for the study.

Inclusion criteria:
Patients with age more than 18 years irrespective of sex
Patients with clinical symptoms and signs of hepatic encephalopathy associated with cirrhosis of liver.

Exclusion criteria:
Patients of age less than 18 years
Patients who presented with acute fulminant hepatitis and non cirrhotic portal hypertension

A proforma has been designed and used for data collection. A detailed clinical history of patients about fever, upper gastro-intestinal bleeding (hematemesis and/or melena), constipation, diarrhea, vomiting, high protein diet, any trauma or surgery and paracentesis were taken. Drug history including use of diuretics, sedatives/tranquilizers, NSAID's was also enquired in detail. Past history of previous hospital admissions was also taken. All patients were carefully examined for fever, jaundice, dehydration, anemia, pedal edema, asterixis, fetor hepaticus and ascites. Hepatic encephalopathy was diagnosed on clinical basis and graded according to West Haven criteria. Any evidence for the presence of other co-existent complications of cirrhosis liver was also recorded and Child's Pugh score assessed for each patient.

All patients were followed for the duration of their stay in hospital and whether they survived or not at the end of their stay were also recorded.

Investigations:
The following relevant investigations were done Complete haemogram, Random blood sugar, Blood urea and Serum creatinine, Liver function tests Serum electrolytes, BT, CT, PTT, INR, Urine routine and microscopy Chest radiograph, Ultrasound abdomen.

OBSERVATION AND RESULTS:

A total of 100 patients with cirrhosis of liver suffering from HE were studied for different precipitating factors for 21 months

Precipitating factors	No. of pts.
Hemetemesis	28
Melaena	23
Infection (TC>10,000)	22
Constipation	41
Excess protein	10
Sedatives	5
Diuretics	9
Na (<135)	25
K (<3.5)	13

Among the precipitating factors the most common cause was Upper GI bleed (Hemetemesis 28 % and Malaena 23 %), Constipation 41 %, Electrolyte imbalance (Hyponatremia 25 % and Hypokalemia 13 %), Infection 22 %, Drugs (Diuretics 9 % and Sedatives 5 %), and Excess protein intake 10 %. In 6 % no precipitating factor was found.

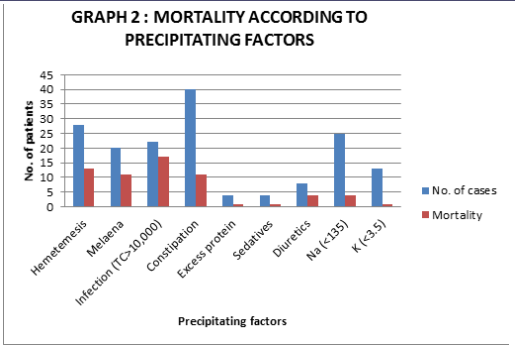
TABLE 2 : MORTALITY ACCORDING TO PRECIPITATING FACTORS

Precipitating factors	No. of cases	Mortality	%
Hemetemesis	28	13	46
Melaena	20	11	55
Infection (TC>10,000)	22	17	77
Constipation	40	11	27
Excess protein	4	1	25
Sedatives	4	1	25
Diuretics	8	4	50
Na (<135)	25	4	16
K (<3.5)	13	1	7

Of the mortality cases, patients who presented with Upper GI bleed, Infection and Drug overdose had a higher mortality rate compared to other precipitating factors.

TABLE 3: NUMBER OF PRECIPITATING FACTORS

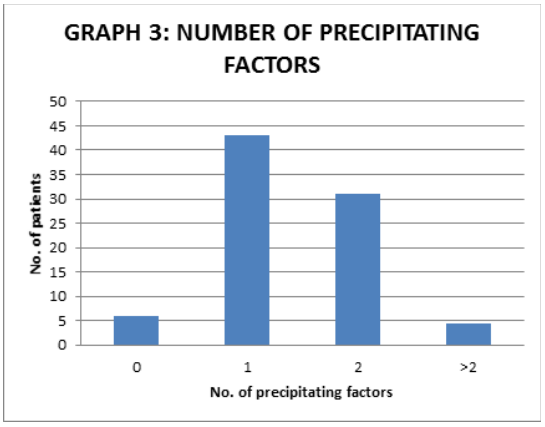
Precipitating Factors	Cases
0	6
1	43
2	31
>2	30



Out of the patients who presented with precipitating factors, 43 % had only one factor, which was the majority, followed by patients with two factors 31 % and patients with factors more than two factors 30 %.

TABLE 4: PROGNOSIS AND OUTCOME

Prognosis	No. of pts.
Discharged	53
DAMA	10
Expired	37



Out of 100 patients, 53 % recovered and was discharged, 10 % got discharged against medical advice, 37 % of patients expired, of which 27 % were males and 10 % were females

DISCUSSION

Liver cirrhosis is one of the most common causes of morbidity and mortality all over the world. HE is a major neuropsychiatric complication of cirrhosis, and its appearance is indicative of poor prognosis. A well-defined precipitating factor is usually identified in most of patients with HE, and control of these factors is a key step in overall management

TABLE5:COMPARING PRECIPITATING FACTORS OF HE IN DIFFERENT STUDIES

Study	GIB	Constipation	Infection	K+	N+	Excess Dietary Protein
Raphael [KC3] et al (n=88)	16.70%	6.20%	21.60%			
Dileep[4] et al (n=87)	45%	49%	67%	33%	23%	26%
Intekhab[5] et al (n=50)	22%	32%	24%	18%	38%	4%
Saad[6] et al(n=50)	38%	38%	44%	12%	-	12%
Sai[7] et al (n=2000)	43%	0.50%	28.50%	12%	25.50%	
Yahia[8] et al (n=237)	36.70%	9.30%	15.60%	-	-	11.40%
Present Study (n=100)	51%	41%	22%	13%	25%	10%

Gastro intestinal bleeding (51%) and constipation (41%) were the common precipitating factors in this study similar to some other studies. Other causes included electrolyte imbalance (hypokalemia in 13% and hyponatremia in 25%), excess protein intake in 10%, drugs (diuretics in 9% and sedatives in 5%) and infections in 22%. Most of the patients with electrolyte imbalance had history of diarrhea or vomiting or were already on diuretic therapy.

Strength and weakness of study:

Limited geographic area, limited time (21 months), limited sample size(n=100).

Compared with other national and international studies, each precipitating factor, sign and symptom is statistically analysed.

CONCLUSION AND SUMMARY

In this study 100 cases of cirrhosis of liver who presented with hepatic encephalopathy were studied over a period of 21 months for precipitating factors of hepatic encephalopathy.

- The commonest cause of cirrhosis in this study was alcoholism, followed by viral hepatitis.
- 43% of patients had one precipitating factor, 31% had two and 30% had more than two factors. No precipitating factor was found in 6% of patients.
- The commonest precipitating factors were Upper GI bleeding (Hemetemesis and Malena), followed by Constipation, Infections and Electrolyte imbalance.
- Mortality rate was higher with patients who presented with Upper GI bleed as well as with infections.
- 53% of the patients in our study improved and got discharged, 10% were discharged against medical advice, and 37% expired.
- From this study it was concluded that in most of the cases there are different factors which play a key role in precipitating hepatic encephalopathy which is a common phenomenon in patients with cirrhosis of liver.
- Upper GI bleed, infections, diuretics, electrolyte imbalance and constipation were the most common precipitating factors.
- There is a definite need for health education in patients who are diagnosed with cirrhosis of liver regarding the risk of hepatic encephalopathy and its precipitating factors.
- Prompt control of infections, routine upper GI endoscopy and follow up,
- prevention of constipation by laxatives, judicial use of sedatives and diuretics and proper advice regarding diet must be an integral part of all counseling protocol to cirrhotic patients
- Hence the early detection and diagnosis of these precipitating factors helps in starting treatment of this fatal condition hence reducing the mortality.

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