



GLUTAMINE INTERVENTION IN OBSTRUCTIVE JAUNDICE PATIENTS PERFORMED WITH ERCP

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ABSTRACT

Background: Carcinoma of the Gallbladder is an aggressive malignancy that occurs predominantly in the elderly. It is the most common form of biliary malignancy and the third most common carcinoma of the digestive tract in Eastern UP and Western Bihar. Present study has found trends to suggest that parenteral and enteral glutamine supplementation improves the nutritional status, quality of life and increasing the duration of survival in post ERCP obstructive jaundice patients.

Objective: Assessment of BMI, Quality Of Life and duration of survival in Glutamine supplemented post ERCP obstructive jaundice patients (50).

Methods: Glutamine supplementation was 50 ml (20g) / day intravenously for 3 days and 30g / day of Glutamine enterally for 4 days. Its effect was assessed on 42nd post ERCP day. BMI was used for determining Nutritional status and Karnofsky score was used for determining the Quality of life.

Result: In the study group,60% of the patients were female. Majority of the patients were in between 41-50 yrs of age (24%). All the patients improved from malnourished status to normal after supplementation. The quality of life of patients improved after Glutamine supplementation. After supplementation all the patients had their Karnofsky score above 50%.After Glutamine supplementation and ERCP, 88% of the patients survived for more than 42 days.

Conclusion: In the study it was found that Glutamine helps in improving the Nutritional Status, Quality of Life and increasing the duration of survival of Obstructive jaundice patients.

KEY WORDS: Glutamine, obstructive jaundice, BMI, Karnofsky Score.

INTRODUCTION

Carcinoma Gallbladder is the most common malignant tumor of biliary tract and the fifth most common gastrointestinal carcinoma in women.^[2,3,8] It is a great diagnostic and therapeutic challenge for surgeons since 5 year survival in most large series is < 5% and median survival is < 6 months^[15,16]. With the exception of the early stage cases detected incidentally at the time of cholecystectomy, most of the tumors are unresectable at presentation and has a poor prognosis. Surgery for obstructive jaundice continues to be associated with significant morbidity and mortality despite recent advances both in preoperative diagnosis and postoperative care.^[11] Several studies have identified preoperative factors which define groups of patients at high risk of postoperative mortality^[12-13] and it has been suggested that mortality in these high risk groups might be reduced by the use of the newly available techniques of external

or internal drainage of the obstructed biliary tree.^[14]

Perioperative complications in patients with obstructive jaundice may be aggravated by disturbances in nutritional status. Controlled studies suggest that treatment of nutritional deficiencies may improve the outcome of surgery^[6]. The highest incidence of carcinoma of gallbladder is in Chileans, American Indians, and in parts of North India where it accounts for as much as 9.1% of all the biliary tract diseases^[7].Gallbladder cancer (GBC) represents the most common and aggressive type among the biliary tree cancers (BTCs). Complete surgical resection offers the only chance for cure; however, only 10% of patients with GBC present with early-stage disease and are considered surgical candidates. Among those patients who do undergo "curative" resection, recurrence rates are high. There are no

established adjuvant treatments in this setting. Patients with unresectable or metastatic GBC have a poor prognosis^[1]. Due to its non specific curative resection depending upon the stage of the disease^[10]. Cancer epidemiology articles often point out that cancer rates tend to be higher among males than females yet rarely is this theme the subject of investigation^[4]. The exact etiology of GB carcinoma is unknown; however, several associated factors have been identified. Glutamine, the most abundant amino acid in the body, is thought to become conditionally essential in critical illness. Some of the important roles for glutamine are as a carrier for inter-organ N, a preferred fuel for enterocytes and cells of the immune system, a substrate for renal NH₃ formation and a precursor for glutathione. Mechanisms by which glutamine could improve recovery include attenuating oxidant damage and inflammatory cytokine production, reducing gut bacterial translocation and improving N balance^[4]. In earlier studies it was found that Glutamine can decrease intestinal permeability, maintain intestinal barrier and attenuate systemic inflammatory response in early post operative patients^[5]. Present study has found trends to suggest that parenteral and enteral glutamine supplementation reduce mortality, improve the nutritional status and quality of life of post ERCP obstructive jaundice patients.

MATERIAL AND METHODS

50 obstructive jaundice patients were taken from the OPD of Department of Surgical Gastroenterology, CSMMU, Lucknow, UttarPradesh. This study is in intervention study. Patients were between 20-80 years of age. Inclusion criteria was Bilirubin levels greater than 5mg%, patients were fit for ERCP and were willing to give their consent for participation in the study. Malignancy was confirmed by FNAC/Biopsy/Brush cytology. Glutamine supplementation was 50 ml (20g) / day intravenously (Aminoven manufactured and marketed by Fresenius kabi India Pvt. Ltd.) the patient for 3 days and 30g/day of Glutamine Orally (Kabimmune manufactured by Drytech process India Pvt. Ltd. and marketed by Fresenius kabi India Pvt. Ltd.) for 4 days. Tool for the study was a questionnaire which was used to obtain the general information of patients. Prior consent of the patient was obtained using a consent form especially designed for the purpose. The study was approved by Ethics Committee of CSMMU (Letter no. 5029/R.Cell-10, Dated:11/01/10,

clinical presentation, it is seldom diagnosed preoperatively except in advanced cases. Survival depends on the ability to achieve a Ref.code-XLEM/A-P4). Nutritional status was determined by BMI, Quality of life was determined by Karnofsky Score and mortality was obtained by assessing the period of survival of the patient.

RESULTS Sex: Cancer epidemiology articles often point out that cancer rates tend to be higher among males than females^[2]. This is found in this research as well. 88% of the patients were female (Table 1).

Table 1: Distribution of patients according to sex

Sex	Number of Patients	Percent
Male	20	40
Female	30	60
Total	50	100

Table 2: Distribution of patients according to their age

Age(Yrs)	Number of Patients	Percent
31-40	4	8
41-50	19	38
51-60	11	22
61-70	12	24
71-80	4	8
Total	50	100

Age group: In previous studies it was found that the greatest incidence of GB carcinoma is in persons older than 65 years^[4]. In the present study it is found that majority of the patients were in between 41-50 yrs of age (24%). (Table 2) (Fig.1)

(25 died and 2 had ascites.)

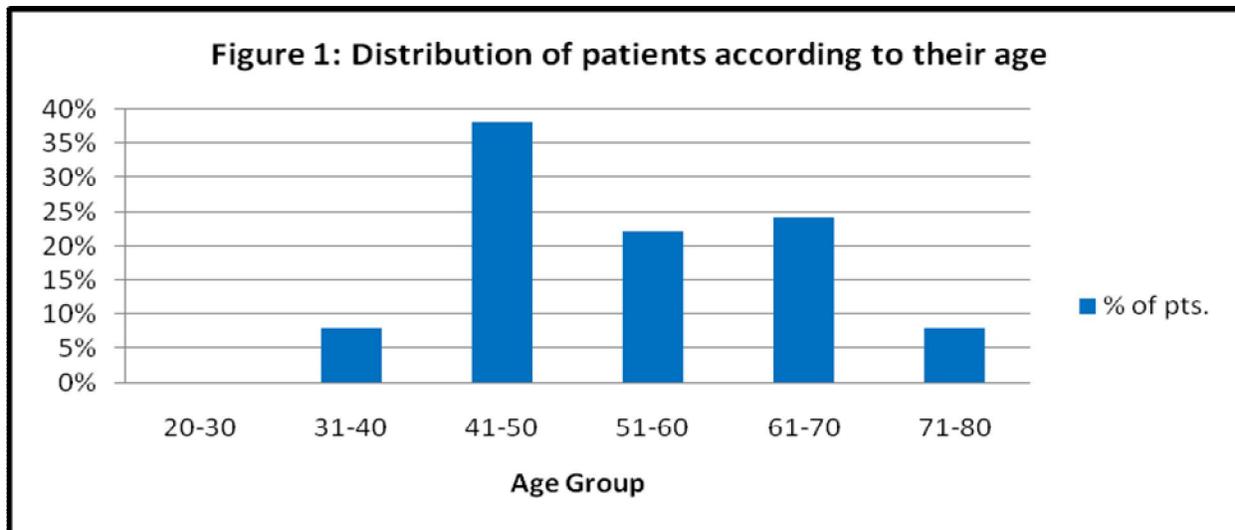
Table 3: Nutritional status of patients before

BMI (Kg/m2)	Pre-intervention		Post-intervention	
	Number of Patients	Percent	Number of Patients	Percent
<16.0 severely malnourished	8	16	0	0
16.0 -16.9 moderately malnourished	2	4	0	0
17.0-18.4 mildly malnourished	8	16	0	0
18.5-24.9 normal	2 3	46	16	64
25-29.9 overweight	5	10	7	28

and after intervention

Table 4: Karnofsky score of respondents before and after intervention period

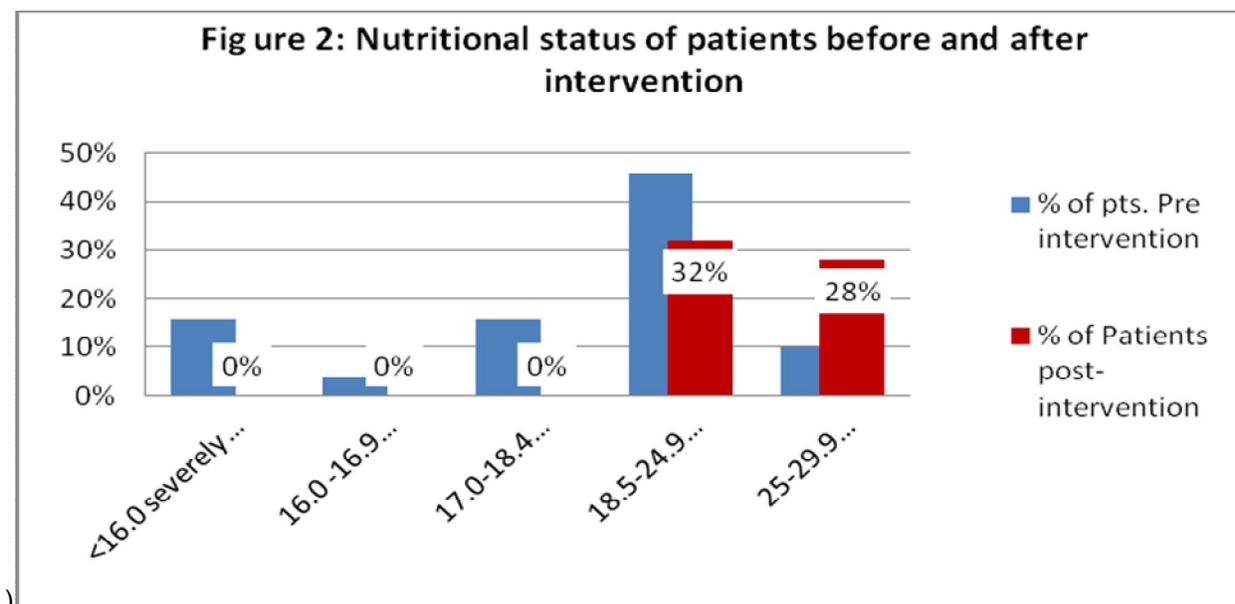
Karnofsky score	Pre-intervention		Post-intervention	
	Number of Patients	Percent	Number of Patients	Percent
90%	7	14	9	18
80%	16	32	3	6
70%	6	24	4	8
60%	9	18	7	14
50%	0	0	2	4
40%	2	4	0	0
30%	2	4	0	0
20%	2	4	0	0
10%	0	0	0	0
0%	0	0	25	50



Nutritional status:

Malnourishment is also associated with obstructive jaundice as patients complain of nausea and are not able to tolerate food. In the study it was found that before supplementation

16% of the patients were severely malnourished but after supplementation none of the patients were malnourished (Table 3). All the patients improved from malnourished status to normal after supplementation. (Fig.2



Quality of life:

The Quality of life was assessed using Karnofsky score. In the study, the quality of life of patients improved after Glutamine supplementation. After supplementation all the patients had their Karnofsky score above 50%

(i.e. requiring some help, can take care of most personal requirements) but before supplementation it was between 10-50% (i.e. requires help often, requires frequent medical care).(Table 4)

Table 5: Duration of survival of the patients

Duration of survival	Number of Patients	Percent
<7 days	3	06
8-21 days	10	20
22-42 days	6	12
> 42 days	31	62

Duration of survival of patients: In present study we found that 88% of the patients survived for more than 42 days after Glutamine supplementation and ERCP.

DISCUSSION

In the study group, 60% of the patients were female. Which has proven by other researches as well. Carcinoma of gallbladder occurs more often in females and more frequently in the seventh decade^[7]. GB carcinoma has a female preponderance. The female-to-male ratio is 3:1^[4]. In other studies also it was found that the greatest incidence of GB carcinoma is in persons older than 65 years. The age of patients in the present study was between 41-50 years. In another study, it was found that majority of patients with obstructive jaundices were between 60 to 69 years old in male and 50 to 59 years in female^[8]. Malnourishment is also associated with obstructive jaundice as patients complain of nausea and are not able to tolerate food. In the current study all the patients improved from malnourished status to normal after supplementation. GBC influences the nutritional status of the patients. Forty-three percent of GBC patients were malnourished with low body mass index^[9]. The quality of life of patients improved after Glutamine supplementation. After supplementation all the patients had their Karnofsky score above 50% but before supplementation it was between 10-50%. The duration of survival was also improved after Glutamine supplementation. 62% of the patients survived for more than 42 days after Glutamine supplementation and ERCP. Gallbladder cancer (GBC) is a highly fatal disease with poor prognosis and 5-year survival <5%^[9]. Another study states that patients with GB carcinoma have an overall mean survival rate of 6 months, and the 5-year survival rate is 5%^[4].

CONCLUSION

In the study it was found that Glutamine helps in improving the Nutritional Status, Quality of Life and increasing the duration of survival of Obstructive jaundice patients.

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COMPETING INTEREST

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

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