ORIGINAL ARTICLE

Frequency and 3 Months Mortality in Patients with Hepatocellular Carcinoma with Portal Vein Thrombosis

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ABSTRACT

Aim: To discover the regularity of portal vein thrombosis and 3 month mortality of patients with and without portal vein thrombosis in patients with hepatocellular carcinoma.
Study Design: Descriptive case series
Place and Duration of Study: Department of Gastroenterology-Hepatology, Shaikh Zayed Hospital, Lahore from 15th June 2016 to 15th December 2016.
Methods: One hundred patients underwent liver ultrasound and Computerized Tomography imaging to determine the presence or absence of PVT. Patients were followed up after 3 months via OPD and phone calls and data on mortality was gathered.
Results: The average age of patients was 54.40±3.78 years. Most of the patients of our research study were males (62%). Middling duration of chronic liver disease was 11.2±0.58 years .Frequency related to portal vein thrombosis, as per operational definition was 29%. At 3 months follow up, 76 patients out of a total of 100 had died. Comparison of mortality in patients with and without portal vein thrombosis was done using chi square test, showing no significant difference in mortality between the two groups with a p score of 0.338.
Conclusion: Portal vein thrombosis is prevalent in patients with hepatocellular carcinoma. Mortality is high in patients with hepatocellular carcinoma, however, portal vein thrombosis does not significantly affect 3 mortality in these patients.
Keywords: Portal vein thrombosis, Hepatocellular carcinoma, Mortality

INTRODUCTION

Hepatocellular carcinoma (HCC) is one of the most dangerous cancer in the world and ranked at sixth position being the mostwidespread cancer, and it is ranked at 3rd position among the most common and severe causes of death worldwide.[1,2] This is not surprising that over 600,000 people die because of HCC within a year.[1] The death rate is predominantlygreat in countries of Asia; it has been found that almost 42% males of Asian countries face death due to liver cancer.[1,2]A good news is that the treatment regarding this cancer is available if this disease would be diagnosed at the early stages of its development then it can be cured through the treatment of resection and percutaneous ablation. However, it came into notice that about 10-40% patients who have HCC are also having portal vein thrombosis (PVT) at the time of identification.[3,4] PVT can increase the growth of the lumpall over the liver and can cause an augmented portal venous blood pressure. This all worsens the situation and can be the reason of reduction in blood supply to the liver which as a resultant cause weakening of liver function. The augmented portal pressure can also be deadly break of esophageal varices. Overall survival has been reported to be much shorter in patients with PVT, compared to patients without PVT, because these patients have more chances to have metastatic disease at diagnosis and fewer therapeutic options.[5] It has been found that mostly survival ranges from 2-4 months in patients with PVT treated with supportive care, compared to 10-24 months in HCC patients without PVT.[2] The situation will be brutally dangerous if thrombus is affecting the main portal vein[6].

According to the findings and studies regarding this context, it is assumed that occlusive PVT is associated with mediocre endurance in patients with HCC due to it's characteristically strength to spread the disease. Unfortunately, very less research studies have been found which are concentrating on the natural history of cases with HCC. However, there are abundance of studies have been found which are making PVT their center of attention regarding occurrence and death in patients with cirrhosis among whom pervasiveness varies from 1% to 16%.[3-5] To address this issue, this study has been planned to study frequency and mortality in patients with HCC who develop PVT. In addition to the data being scarce, studies have mostly been retrospective, and have included only limited subsets of patients thus affecting generalizability[2-7]

MATERIALS AND METHODS

It was a descriptive case series held at Department of Gastroenterology-Hepatology, Shaikh Zayed Hospital, Lahore from 15th June 2016 to 15th December 2016. A total of 100 patients of both gender with age 40-70 years with HCC as per operational definition for at least last 6 months were enrolled. Patients with extrahepatic metastases and not willing to participate were excluded. All the patients underwent liver ultrasound Doppler and CT scan imaging to determine the presence or absence of PVT. Patients were followed up after 3 months via OPD and phone calls and data on mortality was gathered. Statistical analysis was done while using Statistical Package for Social Sciences (SPSS) version 17. Mortality at 3 months between patients with and without PVT was compared with the help of chi square test with p value ≤0.05 as significant.

RESULTS

The average age was 54.40± 3.78 years along most of the patients in the age range 56-70 years. Mainstream of the patients in the study were male (62.0%). Average duration regarding CLD was 11.2±0.58 years. Frequency of mode of presentation, PVT and mortality at 3 months were shown in Table 1.

At 3 months follow up, 76 patients out of a total of 100 had died, with a mortality rate of 76% as per operational definition. Comparison of mortality in patients with and without PVT was done using chi square test. It showed that there was no significant difference in mortality between the two groups with a p value of 0.338 (Table 2).

Table 1: Demographic information of the patients (n=100)

Variable	No.	%
Age (years)		
40-55	46	46.0
56-70	54	54.0
Gender		
Male	62	62.0
Female	38	38.0
Duration of CLD (years)		
<10	46	46.0
≥ 10	54	54.0
Causes of CLD		
HCV	92	92.0
Non B, Non C	5	5.0
HBV	3	3.0
Mode of presentation		
Incidental	5	5.0
Surveillance	15	15.0
Symptomatic	80	80.0
PVT		
Yes	29	29.0
No	71	71.0
3 Months mortality		
Yes	76	76.0
No	24	24.0

Table 2: 3 month mortality with and without PVT

PVT	3 month mortality		P value
	Yes	No	
Yes	25	7	
No	51	17	0.338
Total	76	24	

DISCUSSION

The study examined the frequency of PVT in patients with HCC and survival in these patients. There are some inadequate therapeutic opportunities and liver replacement facilities which are currently at beginning stage, hepatocellular carcinoma endures to become a disease with high mortality in Pakistan.

Man age of patients in this study was 54 years which is relatively younger compared to international studies but comparable to previous study from Pakistan. Like most of the previous studies, Hepatitis C was the main contributor to HCC cases we have seen in our center which is one of the main cause of cirrhosis in Pakistan.[7] Most of the patients in Pakistan are diagnosed after presentation with complications rather than due to surveillance for hepatoma by ultrasound, despite number of guidelines recommending this, in part due to cost and lack of awareness.[6,7] This happens because most of the patients are diagnosed with HCC when it has reached it advanced stage and these results in restricted accessibility of therapeutic options at inexpensive price, merely 24% of patients were alive at 3 months which is quite low compared to international studies. Previous research studies from Pakistan also described the chances of survival are very less the patients who are having it for 1, 3 and 5 years along the survival rate of 26%, 13.1% and 7.7% correspondingly.[7] On the other hand, other research studies have testified improved diagnosis specifically in patients who got decisive cure as the treatment. The rates of survival were 54.9%, 34.7% and 14.8% for the 1, 3 and 5 years for those patients who got reassuring care. Whereas the rates were came out to be 95.9%, 71.3% and 41.4% for 1, 3 and 5 years respectively in cases who got the treatment ultimate therapy for HCC.[12] In a research which was conducted by Grieco it came into light that survival rates were assumed to be 92%, 46% and 24% in cases of 1, 3 and 5 years consecutively.[15]

In the Marrero studies it is found that the size of tumor, prevalence of portal vein thrombosis and MELD worsen the situation when it comes to the diagnosis and treatment prognosis.[8] Moreover, Grieco et al. establishedthe studies that less serum albumin, more serum bilirubin, tumor size from 2cm to 5cm and number of tumors are the causes of less or poor survival indicators.[15]

This research study has providednumerousfresh understandings; it also contains some limitations as well. First of all, the data which is collected for this research is attained from one place with a comparativelyminor sample size (n =100) of patients with PVT. Secondly as it has been discussed before, but PVT is not very well understood. So there can be chances that later some unidentifiedmystifying factors could occur. Third, we did not study the factors which are associated with mortality in this group of patients.

In summary, HCC is associated with high mortality and patients with PVT have increased chance of dying from disease, however, it did not reach statistical significance.

Further studies involving multiple centers incorporating various factors that may lead to mortality should be carried out.

CONCLUSION

Through this research it came into light that there are higher chances of PVT in patients with HCC. HCC has high mortality and patients with PVT have increased chance of dying from disease, however, it did not reach statistical significance in this study.

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