World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 5.008

EFFICACY OF RIFAXIMIN IN HEPATIC ENCEPHALOPATHY

Dr. Usman Ali*, Tuqeer Arshad and Tayyeba Qandeel

Sheikh Zayed Hospital, Rahim Yar Khan.

***Corresponding Author: Dr. Usman Ali**
Sheikh Zayed Hospital, Rahim Yar Khan.

Article Received on 22/09/2018 **Article Revised on 12/09/2018** **Article Accepted on 02/10/2018**

ABSTRACT

Objective: To determine the frequency of efficacy of Rifaxamin in cases of hepatic encephalopathy. **Methodology:** This cross sectional study was carried out at Medical Department of Sheikh Zayed Hospital, Rahim Yar Khan during January 2017 to June 2017.The cases were selected irrespective of gender and age more than 25 years via non-probability consecutive sampling. The cases were categorized on the basis of laboratory and clinical data in two child pugh classes and the cases of child class B and C were selected. Hepatic encephalopathy was labelled on the basis of West Haven criteria. The cases of grade II or more were selected. These cases were offered Rifaxamin per oral in a dose of 550 mg thrice a day for 1 week and were looked daily for the absence of signs and symptoms of hepatic encephalopathy and was labelled as yes if all the signs and symptoms were absent. **Results:** In this study there were total 100 cases with mean age of 57.34±8.29 years. There were 68% males in this study and 36% had child pugh class B and 39% cases had hepatic encephalopathy grade IV. Efficacy of Rifaxamin was seen in 39% of the cases. Efficacy was significantly high in cases that had child class B where it was seen in 35 (54.68%) of the cases with p= 0.001. This efficacy was also significantly high in cases with grade IV of hepatic encephalopathy and was seen in 23 (58.97 %) of cases with p= 0.01. **Conclusion:** Rifaxamin is highly efficacious and it has shown significantly high in cases with child pugh class B and encephalopathy grade IV.

KEYWORDS: Encephalopathy, Rifaxamin.

INTRODUCTION

Chronic liver disease (CLD) is a great concern in the developing countries as it poses a lot of health care burden in the developing countries and this is not neglect able even by the developed ones because of high degree of alcoholism and increased susceptibility to various infections after the rising trends of Human immune deficiency virus (HIV). It is considered as the 12th leading cause of deaths and every year more than 1/4th of a million deaths are reported in USA only due to this.[1] In Pakistan the prevalence of CLD in cases of hepatitis B and C virus infection range 4-6% of the cases.[2-4]

CLD can result in wide variety of sign and symptoms and hepatic encephalopathy is a highly morbid form.[5] The pathophysiology relies upon the ammonia effect on the brain as it is neurotoxin and impairs energy consumption of brain and halts nerve potential transmission through synapses. The coma leading to risk of aspirations and other superadded infections due to hospital stay and bed sores in cases of hospitalized and poor nursing care is one important causes leading to death. The diagnosis of HE is made clinically using West Haven Criteria (WH).[6-7] A number of drugs have been tried in the past with different degree of success and include lactulose, doxycycline, ciprofloxacin, metronidazole, enemas and Rifaxamin is recently being used with premising results in encephalopathy.[8-10]

OBJECTIVE

To determine the frequency of efficacy of Rifaxamin in cases of hepatic encephalopathy.

METHODOLOGY

This cross sectional study was carried out at Medical Department of Sheikh Zayed Hospital, Rahim Yar Khan during January 2017 to June 2017.The cases were selected irrespective of gender and age more than 25 years via non-probability consecutive sampling. The cases were categorized on the basis of laboratory and clinical data in two child pugh classes and the cases of child class B and C were selected. Hepatic encephalopathy was labelled on the basis of West Haven criteria. The cases of grade II or more were selected. These cases were offered Rifaxamin per oral in a dose of 550 mg thrice a day for 1 week and were looked daily for the absence of signs and symptoms of hepatic encephalopathy and was labelled as yes if all the signs and symptoms were absent.

Statistical analysis

The data was processed by SPSS-23. Effect modifiers were stratified and chi square test was applied to see the significance and p value <0.05 was considered as significant.

RESULTS

In this study there were total 100 cases with mean age of 57.34±8.29 years. There were 68% males in this study and 36% had child pugh class B and 39% cases had hepatic encephalopathy grade IV. Efficacy of Rifaxamin was seen in 39% of the cases. Efficacy was significantly high in cases that had child class B where it was seen in 35 (54.68%) of the cases with p= 0.001 as in table I. This efficacy was also significantly high in cases with grade IV of hepatic encephalopathy and was seen in 23 (58.97 %) of cases with p= 0.01 (table II).

Table No. I: Child Pugh Class and efficacy of Rifaxamin (n= 100).

Child pugh Class	Efficacy		Total	Significance
	Yes	No		
C	4 (11.11%)	32 (88.89%)	36 (36%)	p= 0.001
B	35 (54.68%)	0 29 (45.32%)	64 (64%)	
Total	39 (39%)	46 61 (61%)	100 (100%)	

Table No. II: Grade of hepatic encephalopathy and efficacy of Rifaxamin (n= 100).

Grade of hepatic Encephalopathy	Efficacy		Total	Significance
	Yes	No		
II	0 (00%)	4 (100%)	4 (4%)	p= 0.01
III	16 (28.07%)	41 (71.93%)	57 (57%)	
IV	23 (58.97 %)	16 (41.03%)	39 (39%)	
Total	39 (39%)	(61%)	100 (100%)	

DISCUSSION

Hepatic encephalopathy is one of the most common and dreadful complications of chronic liver disease as it predisposes to aspiration pneumonia which had a high degree of mortality in such cases on the back ground of cirrhotic liver disease; hence prompt treatment with best efficacy is always needed on emergency basis. Lactulose is the most commonly administered drug and Rifaxamin is among the recent ones.

Efficacy of Rifaxamin was seen in 39% out of the 100 cases of CLD included in this study which was close the results of the studies that used Rifaxamin for the management of these cases. according to a study carried out by Ojetti V et al, they found this success rate in around fifty percent of the cases which was slightly high as compared o present study.[11] The findings of the present study; however, were similar to the study done by Sharma BC et al. they, in their randomized controlled trial confabulated comparison between Rifaxamin and lactulose and it found that Rifaxamin was significantly better drug than Lactulose with p= 0.4. Zullo et al, in another study revealed that Rifaxamin is significantly better in efficacy as well as time needed for the efficacy in cases of hepatic encephalopathy with p< 0.05.[12-13]

Efficacy was significantly high in cases that had child class B where it was seen in 35 (54.68%) of the cases with p= 0.001 and was also significantly high in cases with grade IV of hepatic encephalopathy and was seen in 23 (58.97 %) of cases with p= 0.01.

This was also revealed by the studies in this context which have shown that lesser the degree of severity of cirrhosis; higher are the chances to come back of encephalopathy. According to a study done by Bass et al, found significantly better efficacy in case with child pugh class B (P= 0.02).[14] There was slight difference in terms of assessment of the severity in the present study was labeled by Child Pugh Classification and in their study, they used MELD scoring system. Neff et al carried the similar study and they also found that the efficacy with milder for of disease (MELD score less than 20) had better outcome in the management of hepatic encephalopathy with Rifaxamin than severe liver disease.[15]

CONCLUSION

Rifaxamin is highly efficacious and it has shown significantly high in cases with child pugh class B and encephalopathy grade IV.

REFERENCES

1. Schuppan, D, Afdhal NH. Liver cirrhosis. The Lancet, 2008; 371(9615): 838-851.
2. National Vital Statistics Reports. Centers for Disease Control and Prevention, 2013; 61(4): 3-5.
3. Jiwani N, Gul R. 'A Silent Storm: Hepatitis C in Pakistan.' J Pak Med Sci., 2011; 1(3): 89-91.
4. Raja NS, Janjua KA. Epidemiology of hepatitis C virus infection in Pakistan. J Microbiol Immunol Infect, 2008; 41: 4-8.

5. Ali SA. Rafe MJ, Qureshi H, Vermund SH. Hepatitis B and hepatitis C in Pakistan: prevalence and risk factors. Int J Infect Dis, 2009; 13: 9-19.
6. Cash WJ, McConville P, McDermott E, McCormick PA, Callender ME, McDougall NI. "Current concepts in the assessment and treatment of hepatic encephalopathy". QJM, 2010; 103(1): 10.
7. Ferenci P, Lockwood A, Mullen K, Tarter R, Weissenborn K, Blei A. "Hepatic encephalopathy--definition, nomenclature, diagnosis, and quantification: final report of the working party at the 11th World Congresses of Gastroenterology, Vienna, 1998". Hepatology, 2002; 35(3): 716-21.
8. Coltart TH. Tranah DL. Inflammation and hepatic encephalopathy. Archs Biochem Biophys, 2013; 536: 189–196
9. Sharma BC, Sharma P, Lunia MK, Srivastava S, Goyal R, Sarin SK.. A randomized, double-blind, controlled trial comparing rifaximin plus lactulose with lactulose alone in treatment of overt hepatic encephalopathy. Am J Gastroenterol, 2013; 108(9): 1458-63.
10. Als-Nielsen B, Gluud LL, Gluud C. Non absorbable diasacchardes for hepatic encephalopathy: systemic review of randomised trials. BMJ, 2004; 328: 1046.
11. Ojetti V, Lauritano EC, Barbaro F *et al*. Rifaximin pharmacology and clinical implication. Expert Opin Drug Meta Toxicol, 2009; 5: 675–82.
12. Sharma BC, Sharma P, Agrawal A, Sarin SK. Secondary prophylaxis of hepatic encephalopathy: an open label randomized controlled trial of lactulose versus placebo. *Gastroenterology*, 2009; 137: 885-91.
13. Zullo A, Hassan C, Ridola L, Lorenzetti R, Salvatore MA, Riggio O. Rifaximin therapy and hepatic encephalopathy: Pros and cons. *World J Gastrointest Pharamcol Ther*, 2012; 3: 62-7.
14. Bass NM, Mullen KD, Sanyal A, Poordad F, Neff G, Leevy CB. Rifaximin treatment in hepatic encephalopathy. *N Engl J Med*, 2010; 25(362): 1071-81.
15. Neff GW, Jones M, Broda T, *et al*. Durability of Rifaximin response in hepatic encephalopathy. *J Clin Gastroenterol*, 2012; 46: 168-71.