ORIGINAL ARTICLE

Comparison of Sustained Viral Response with Sofosbuvir Plus Ribavirin and Sofosbuvir Plus Daclatasvir

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ABSTRACT

Background: Among different trails studies, the sustained viral responses (SVR) at 12 weeks of post treatments usually named as SVR12 were achieved more that 90% with different drug combinations while applying the treatment. But the concomitant medical and health conditions to advanced liver disease can affect adversely to the (SVR) response that may leads to a complicated interpretations.
Aim: To compare the sustained viral response with SOF+DCV and SOF+RBV in patients with advanced liver disease /HCV.
Methods: The study design opted for the present research was observational prospective cohort where the patients with HCV were assessed or evaluated for the sustained viral response after treating with two treatment regimens. The first treatment includes, SOF+RBV whereas the 2nd regimen or treatment was SOF+DCV. The exclusion criteria include all the patients with renal or cardiac disease, patients below 18 years of age whereas all the patients with chronic HCV infection were included in this study.
Results:A total of 100 patients were recruited for this study. Both the group contains 50 HCV patients each whereGroup A was treated with SOF+DCV and group 2 was treated with SOF+RBV. The median age for the HCV patients was 53 years. 70% were males and 30% were females.Across the baseline the SVR12 results were comparable for both groups after omitting non virological failure. Overall 92% SVR12 was achieved in patients with genotype 1a, 86% with genotype 1b, 50% with genotype 2, 85% in genotype 3 and almost all patients with genotype 4. Also the response rates were reported high regardless of cirrhosis status of the patients with low counts of platelets or albumin levels. 91% SVR12 achieved with treatment SOF+DCV whereas it was achieved 85% with SOF+RBV.
Conclusion: We may concluded in our study both the treatment options has achieved a consider SVR12 rate in patients with advanced liver disease with only the difference of duration applied. Some findings strongly supports the treatment of SOF+DCV upon the other applied treatment.
Key words:direct-acting antivirals (DAAs), sustained viral responses (SVR), advanced liver disease, cirrhosis.

INTRODUCTION

While treating chronic HCV infected patients, oral combination of direct-acting antivirals (DAAs) has more suited the standards of care among patients. [1-4] Among different trails studies, the sustained virological responses (SVR) at 12 weeks of post treatments usually named as SVR12 were achieved more that 90% with different drug combinations while applying the treatment. But the concomitant medical and health conditions to advanced liver disease can affect adversely to the (SVR) response that may leads to a complicated interpretations. Sofocubvir (SOF) is a pan-genotypic nucleotide analogue inhibitor of the HCV NS5B RNA polymerase and Daclatasvir (DCV) is a potent, pan-genotypic inhibitor of the HCV NS5A protein [5-6] In most of trails with phase III, an administration of any combination of drug with once daily dose is well tolerated and achieved the desired SVR12 rates i.e. above 90% among patients with advancedliver disease and of certain genotype infections. [7-9] This approved the administration of SOF+DCV and SOF+RBV treatment in chronic HCV infection patients. The main aim of the study was to compare the sustained viral response with SOF+DCV and SOF+RBV in patients with advanced liver disease /HCV.

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MATERIAL AND METHODS

The study design opted for the present research was observational prospective cohort where the patients with HCV were assessed or evaluated for the sustained viral response after treating with two treatment regimens. The first treatment includes, SOF+RBV whereas the 2nd regimen or treatment was SOF+DCV. The study duration was of 24 months starting from Jan 2015. The venue of the study was xyz hospital. The exclusion criteria include all the patients with renal or cardiac disease, patients below 18 years of age whereas all the patients with chronic HCV infection were included in this study. Firstly the liver stage was evaluated for all patients moreover a predefined algorithm was used to reassess the cirrhosis by using the data from liver biopsy. Demographics information along with diagnostics values was noted. The recommended doses were provided to both the groups' patients. Standard operating procedures were followed for the laboratory diagnostic tests.An informed consent was also taken from the patients or attendant of the patient. Ethical consideration was taken in to account by taking approval Hospital ethical Committee.
Statistical analysis: All the collected data was stored electronically & analyzed later by using SPSS version 20. Descriptive statistics were applied to calculate mean and standard deviation. Frequency distribution and percentages were calculated for qualitative variables like gender, sustained viral responseetc.Over all a P values less than 0.05 was considered statistically significant.

RESULTS

A total of 100 patients were recruited for this study. Both the group contains 50 HCV patients each whereGroup A was treated with SOF+DCV and group 2 was treated with SOF+RBV. The median age for the HCV patients was 53 years. 70% were males and 30% were females. Mostly the HCV patients were infected with genotype 1b as 38%, 1a as 32% and genotype 3 was in 20% whereas traces were had HCV RNA above $2*10^6$ IU/mL at reference. The baseline demographic and diagnostic characteristics for HCV patients were given in table 1.

Almost 90% of the patients who were on treatment with SOF+DCV had achieved SVR12 whereas 85% SVR12 were achieved by SOF+RBV. Response rates in both treatments were high after the non viroligcal failure were omitted. 4 patients initiating therapy SOF+RBV had achieved SVR12, on the other hand 10 patients in treatment regimen two i.e. SOF+DCV. Across the baseline the SVR12 results were comparable for both groups after omitting non virological failure. Overall 92% SVR12 was achieved in patients with genotype 1a, 86% with genotype 1b, 50% with genotype 2, 85% in genotype 3 and almost all patients with genotype 4. Also the response rates were reported high regardless of cirrhosis status of the patients with low counts of platelets or albumin levels. 91% SVR12 achieved with treatment SOF+DCV whereas it was achieved 85% with SOF+RBV.

Table 1: Baseline demographic and diagnostic characteristics for HCV patients

Characteristic/parameter	SOF+ DCV	SOF+ RBV	Total
Age (Median)	54	53	53
Sex	37	42	66
BMI (Median)	24.6	26.1	25.35
HCV genotype			
1	22	20	42
2	18	17	35
3	6	8	14
4	4	5	9
MELD score			
Below 10	22	20	42
`10-15	23	21	44
`16-20	4	5	9
`21-25	1	3	4
Above 25	0	1	1
Albumin			
Below 35	24	23	47
Above 35	20	22	42
Not reported	6	5	11
Platelet count	93	88	37
Creatinine clearance			
Above 90	19	24	43
60-89	18	21	39
Below 60	13	5	18
Hepatocellular carcinoma,	4	3	7
Liver transplant recipient,	8	9	17

DISCUSSION

The study was planned to compare the sustained viral response (SVR) in patients treated with two different treatments. We observed in our study better SVR's were achieved with first treatment i.e. SOF+DCV although the other treatment was also of noticeable achievements with very less difference. Clinically relevant information available on the effectiveness and safety of treatments i.e., SOF+DCV and SOF+RBV especially in a bigger cohort of progressive liver disease, these include decompensated cirrhosis also. Mostly the presented populations in many clinical trials were not more likely to respond to treatments with satisfactions. We presented in our study the SVR12 rates were achieved in advanced liver disease with low platelet counts or low albumin levels. Similar findings were available in literature[9,10] even by excluding the non-virological failure patients the SVR12 rate were still high. We observed in our study above 90% of SVR12 rates in patients with cirrhosis. The outcomes related to the efficacy of both the treatments were consistent with other related studies especially the phase III trails, despite of high number of patients with advanced diseases[7,8,9,11,12,13]. somehow this results was contradictory to few studies[14,15]. The treatment of SOF+RBV had demonstrated optimal safety and efficacy in reality or real scenarios especially in patients with advanced liver diseases. This safety and efficacy was also comparable in treatment regimen with SOF+DCV with the same advanced liver disease[16,17,18]. Conversely, this treatment outcome were limited to genotype 1 and 4 and the available data evidences shows less response rate in genotype 3 infection irrespective of duration of treatment[18]. We report in our study, similar response rates with the both treatments or in both groups, although the RBV may not affect the efficacy of the other drug even it is applied till longer time period. But definitive conclusions can be drawn from the study findings. Another finding of our study was the SVR12 rates in genotype 3 infections, we observed low rates were achieved by the treatment containing SOF+DCV in patients with cirrhosis whereas high SVR12 rates were reported in published literature[8]. But a considerably high response rates were observed on treating with SOF+RBV in patients with compensated cirrhosis[19]. An important factor was observed in study that the treatment duration, we reported in our study the suboptimal SVR12 rates with shorter duration of treatment in patients with cirrhosis[20]. This shows the longer treatment duration may achieve a better response rate between both treatments especially in treating genotype 3 patients with advanced cirrhosis. This finding was supported by other published studies[12,13]. Apart from the limitation of the study, we put our efforts to highlight the need or selection of proper treatment plan while treating HCV patients. This study is one of its kinds in the local population; further studies in the era may definitely explore better ways and opportunities.

CONCLUSIONS

We may concluded in our study both the treatment options has achieved a consider SVR12 rate in patients with advanced liver disease with only the difference of duration applied. Some findings strongly supports the treatment of SOF+DCV upon the other applied treatment.

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