

Comparison of Efficacy of Oral Drug Therapy with Interferon in Hepatitis C

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ABSTRACT -AIMS AND OBJECTIVE: To observe the treatment of hepatitis C and to compare the oral drug therapy with interferon.

Methods: An cross sectional study was conducted in outpatient departments of different hospitals of Pakistan including(Jinnah hospital Lahore, Services hospital Lahore, Sheikh zayed hospital Lahore, Mayo hospital and Victoria Hospital Bahawalpur). Data of 100 patients within 20 years-70years of age, diagnosed with hepatitis C, was collected using convenient sampling technique during face to face interviews with patients. Then data was compiled, analyzed and presented in tabular form.

Results: Results showed that 83% patients were given oral therapy 8% of patient were given interferon and 10% were given both as combination therapy. The most common and current medicines used for hepatitis C are 61% Ribavirin 67% sofosbuvir 17% ledipasvir. Some side effects were seen like 8% depression 5% itching in body 6% dizziness and 31% body pain. 99% of patients were following drug regimen properly.

Conclusion: it is concluded that the efficacy of oral (sofosbuvir + ribavirin) therapy is greater as compared to the inject able (interferon + ribavirin) therapy because oral therapy does not relapse and disease eliminates in shorter time 3 months than long therapy inject able (6 months)

INDEX TERMS : Hepatitis C, efficacy, oral drug therapy, interferon , combination therapy , liver disease ,medications .

Introduction

Liver disease can be inherited (genetic) or caused by a variety of factors that damage the liver, such as viruses and alcohol use. Approximately 25,000,000 Americans have a liver related disorder, including 3.9 million people with hepatitis C [1]. Hepatitis C virus (HCV) is mostly transmitted through exposure to infective blood. There is no vaccine for HCV [2]

The WHO reports that approximately 3% of the world population or 170 million persons are affected with hepatitis C virus (HCV) with between 3 and 4 million new infections each year, [3] Egypt has an unusually high prevalence of hepatitis C with 20% of Egyptian blood donors positive for HCV antibody [4] . The estimated prevalence of HCV sero positivity in the United States general population is 1.6% or 4.1 million persons. [5].

HCV is treated with a glycoprotein commonly known as interferon (INF) alpha and it is considered the backbone of [6]. Afterwards interferon plus ribavirin become a gold standard (3 MIU thrice weekly along with ribavirin 800 to1200 mg per day). [7]. currently the regular treatment of HCV is pegelated interferon (PEG-INF) in combination with ribavirin. [8].

Current HCV therapy for genotypes 2a to 2b, 3a to 3d, 5a, 6a and mixed genotypes infected patients is 3 subcutaneous injections of 3 monitor unit of recombinant interferon alpha and ribavirin (10 mg/ day/ kg body weight) in one week for 6 months. Individuals infected from HCV genotype 1a to 1c, 4 and mixture of 1 and 4 HCV genotypes should receive three 3 MU subcutaneous injections of recombinant IFN alpha and ribavirin that are given orally in a week for total 48 weeks [9]

According to the Centre for Disease Control and Prevention, the rate of spontaneous viral clearance is relatively low (15–25 %); thus, in order for a chronically infected person to clear the virus from their body anti-viral pharmacotherapy is generally required [10] [11]

Younossi and colleagues compared interferon-based and all oral therapy in which it was concluded that all-oral therapy was more cost effective compared to interferon-based therapy. [12]

Materials And Methods:

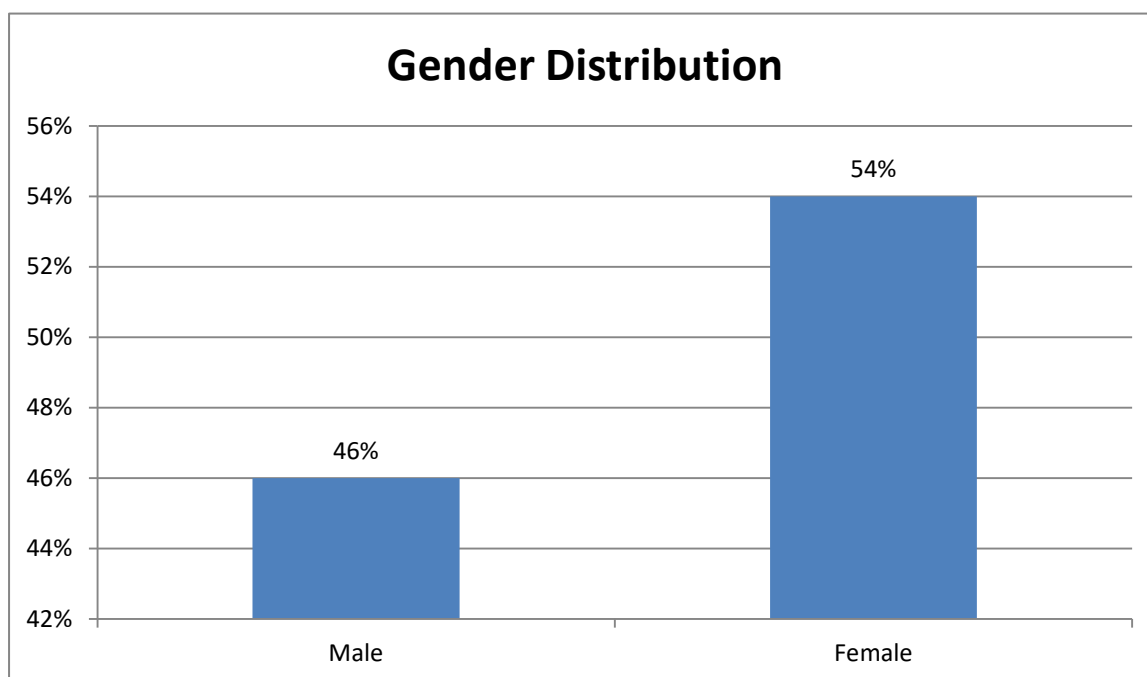
An cross sectional study was conducted during June 2017-August 2017 in outpatient departments of different hospitals including Jinnah hospital Lahore, Services hospital Lahore, Shiekhzayed hospital Lahore, Mayo hospital and Victoria Hospital Bahawalpur. Data of 100 male and female patients, within age limit of 20 years-70years who were diagnosed with hepatitis C, was collected. Pregnant women with hepatitis C were excluded for this study. For data collection purpose an extensive form was designed covering the following aspects: patients demographic information, symptoms of hepatitis C, side effects, prevention, management and treatment. Form was filled during face to face interview with patients then data was compiled, analyzed and presented in tabular form. Extensive calculations and statistical functions were applied to analyze the results and led to graphical representation of results.

Results :

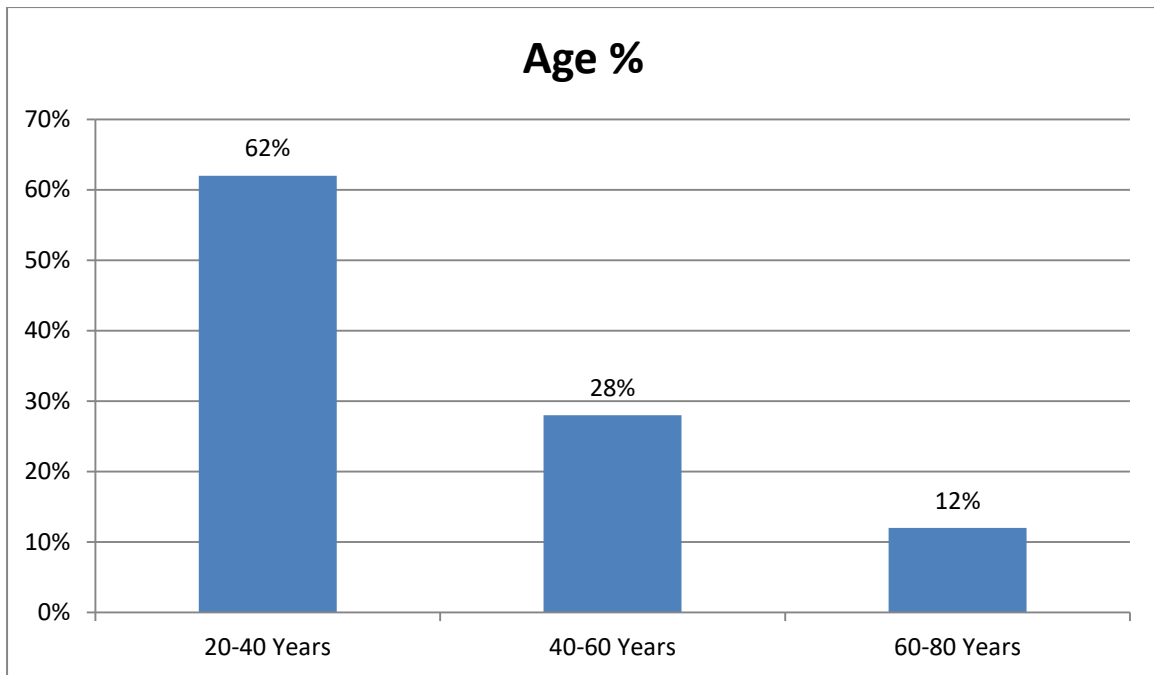
Data was collected from 100 individuals. The results shows that 46% males and 56% females were suffering from hepatitis C (figure 1). The age limit of patients that 62% were in (20 – 40 yrs) and 28% (40-60yrs) and 12% (60- 80yrs) (figure 2).

Family history shows that 13% suffer from hepatitis C 4% suffered from hepatitis A and 6% suffered from hepatitis B (figure 3). The major chief complaints shown were 5% polyuria, 56% stomachache, 23% fatigue and 25% vomiting (figure 4). The most important factor was type of hepatitis that whether it is chronic or acute and which type is more common hence 62% patients suffered from acute hepatitis and 38% suffered from chronic hepatitis (figure 5).

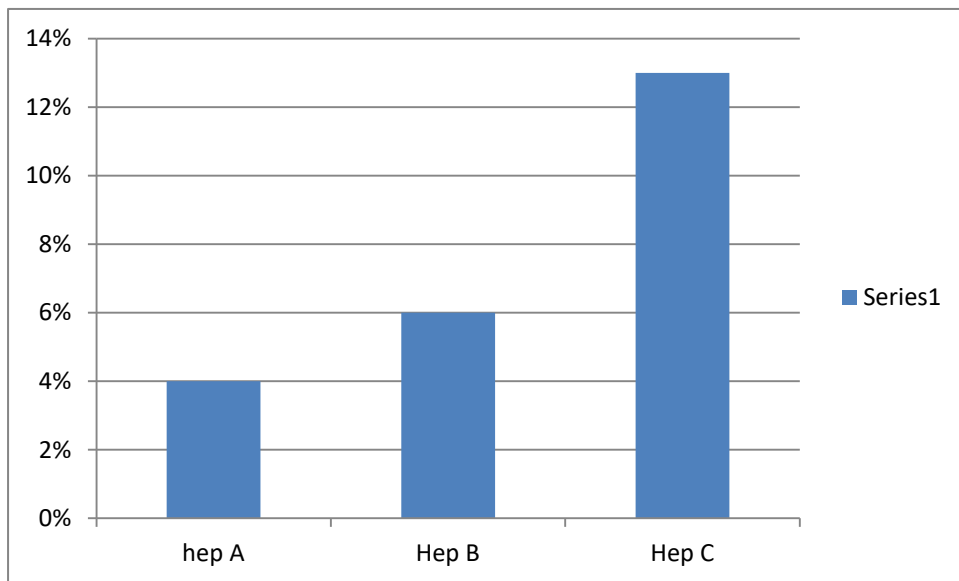
Different type of therapy was given to patients 83% oral therapy 6% interferon therapy and 10% combination therapy was given (figure 7) and most common medicines used for the treatment of hepatitis are 61% Ribavirin 68% sofosbuvir 17% ledipasvir 11% simeprevir and 8% other medicines were given (figure 8). But some medicines had side effects which were seen very commonly in patients the side effects were 8% depression 5% itching 6% fatigue and 31% pain in body were seen (figure 6).



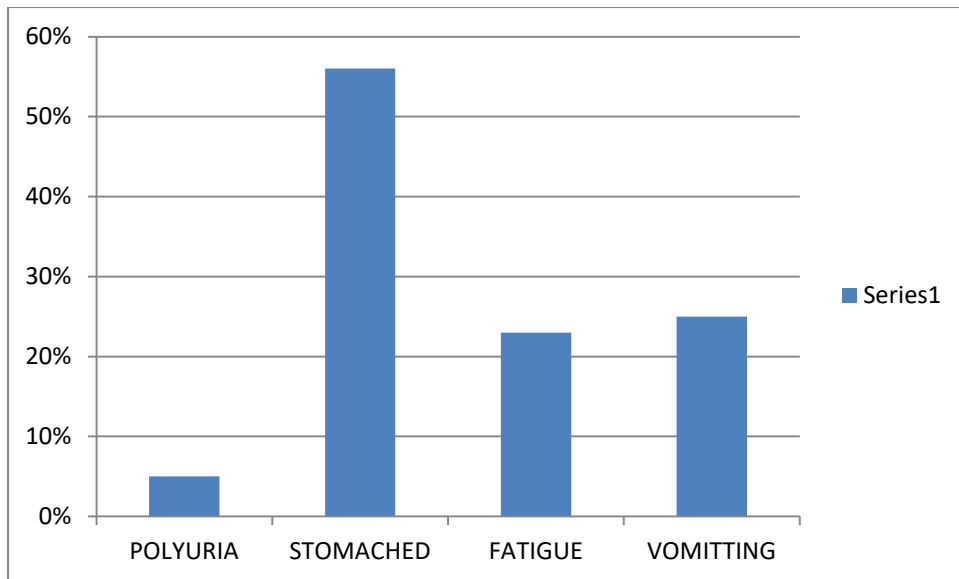
(Figure :1 age distribution)



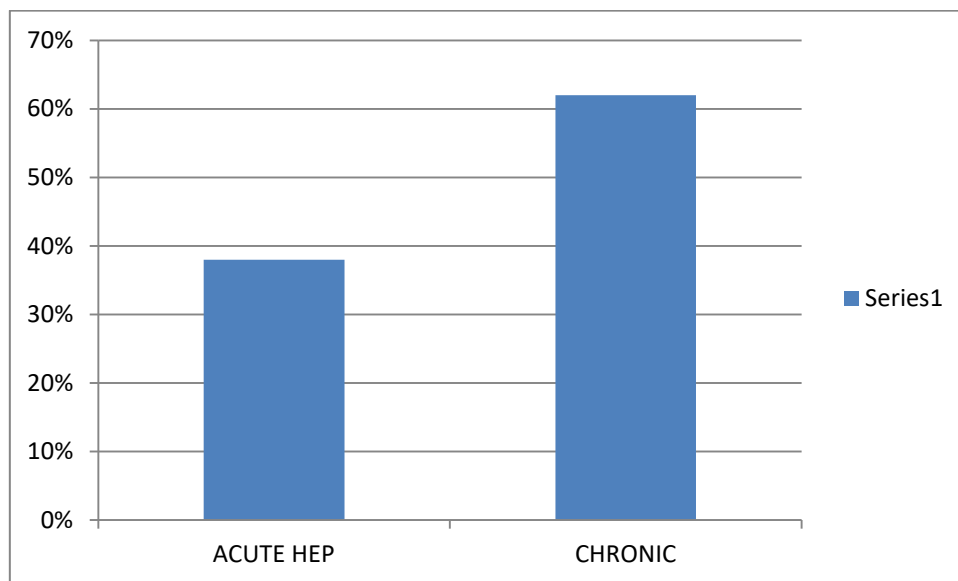
(Figure 2: Age groups)



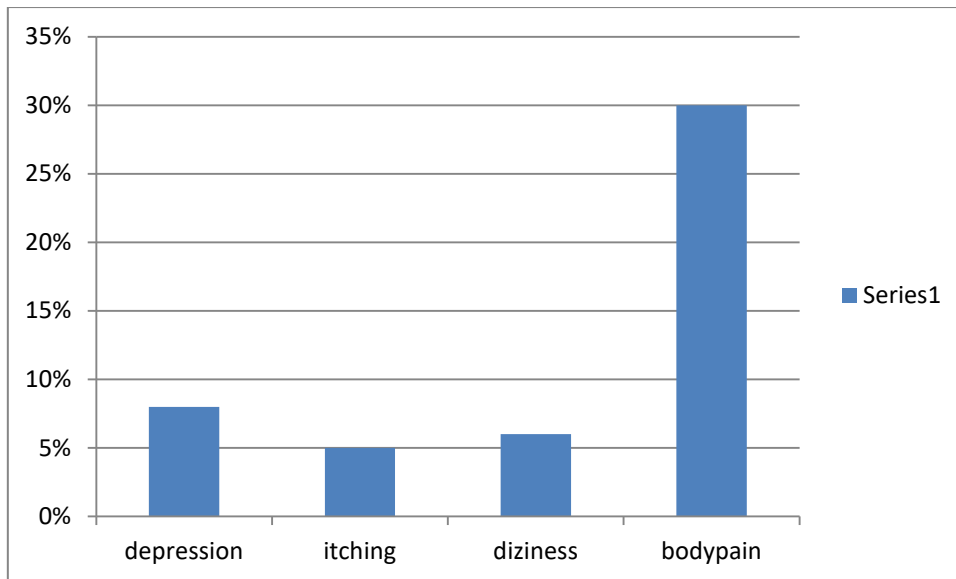
(Figure 3: family history)



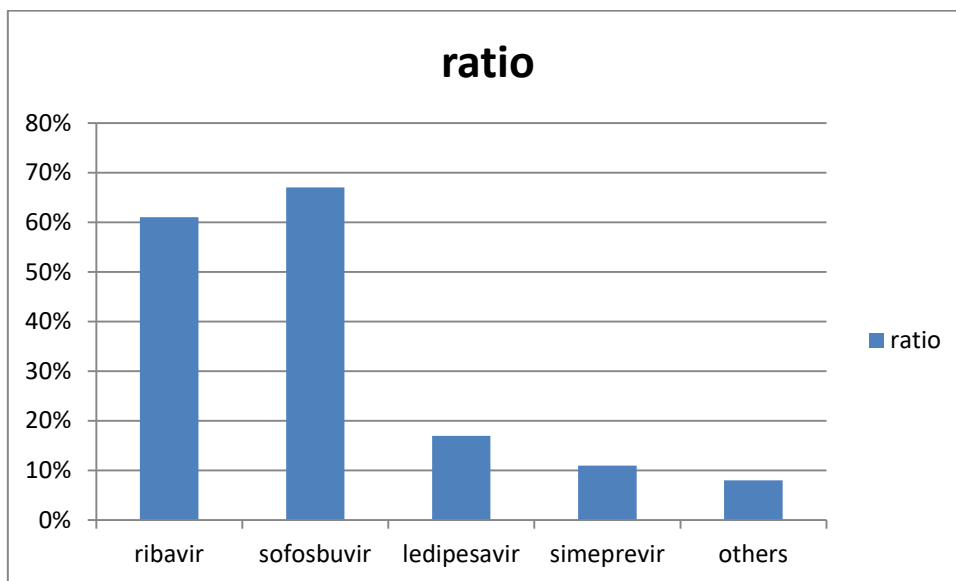
(Figure : 4 chief complaint)



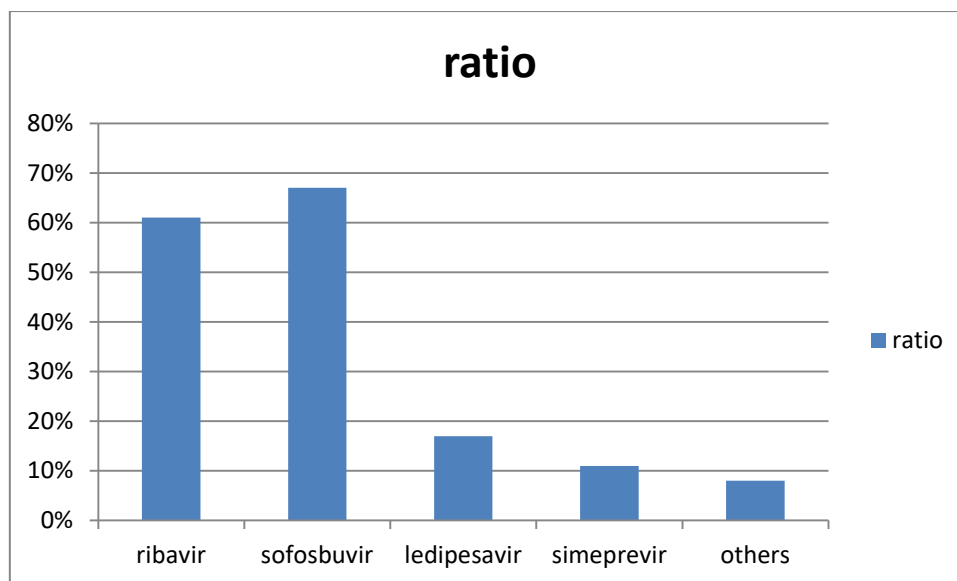
(Figure 5: type of hepatitis)



(Figure 6: side effects of medicine)



(Figure 7:Type of therapy given to patients)



(Figure 8 : current medication used for hepatitis C)

	Male	Female
percentages	46%	54%
frequency	46	54

Table 1 Age distribution

20-40 Years	f	40-60years	F	60-80years	f
62%	62	28%	28	12%	6

Table 2 : age limits

Hep A	f	Hep B	f	Hep C	f
4%	4	6%	6	13%	13

Table 3: family history

	polyuria	stomached	fatigue	vomiting
percentages	5%	56%	23%	25%
frequency	5	56	23	25

Table 4 : chief complaints

	Chronic hep	Acute hep
%	38%	62%
Frequency	38	62

Table 5 : type of hepatitis

	Depression	Itching in body	fatigue	Body pain
%	8%	5%	6%	31%
n	8	5	6	31

Table 6 : side effects of medicines

	oral	interferon	both
%	83%	6%	10%
n	83	6	10

Table 7: type of drug therapy

Medicines	Percentage	frequency
Ribavirin	61%	61
sofosbuvir	67%	67
ledipasavir	17%	17
simeprevir	11%	11
others	8%	8

Table 8 : type of medicines

Discussion :

The hepatitis C virus is a blood borne virus and the most common modes of infection are through exposure to small quantities of blood. This may happen through injection drug use , unsafe injection practices, unsafe health care , and the transfusion of unscreened blood and blood products .

HCV screening has several potential benefits. By detecting HCV infection early, antiviral treatment can be offered earlier in the course of the disease which is more effective than starting at a later stage. [13] Further, early detection together with counselling and lifestyle modifications may reduce the risk of transmission of HCV infection to other people. The optimal approach to screen for HCV is to test the individuals having risk factors for exposure to the virus. [14]

Most of the patients diagnosed with Hepatitis C were female. It has been shown in a study that there exist strong evidence in favour of a higher HCV clearance rate in females compared with males [15].

According to survey 83% patients were given oral therapy 8% of patient were given interferon and 10% were given both as combination therapy. Oral therapy was found to be more cost effective. A study conducted by Younossi showed that all-oral therapy was more cost effective compared to interferon-based therapy [16]. Another study conducted by Hagan and colleagues showed that oral therapy, as compared to an interferon-based regimen, was cost-effective for genotypes 2 and 3 disease. [17]. The most common and current medicines used for hepatitis C are 61% Ribavirin 67% sofosbuvir 17% ledipasavir 11% simeprevir and 8% other medicines like omeprazole (risek) flagyl ant etc . Some side effects were seen like 8% depression 5% itching in body 6% dizziness and 31% body pain was seen. 99% of patients were following drug regimen properly.

Conclusion :

Hepatitis C is the general term inflammation of liver and transmitted through exposure to infective blood .this may happens to transfusion of HCV contaminated blood and blood products. From research it was concluded that both oral and interferon therapies were given and in some places and their combination therapy was also given .According to research oral therapy (ribavirin + sofosbuvir) is more effective, common and show better results because oral therapy has more patient compliance , less side effects easily affordable and eliminates

diseases in shorter period within 3 months as compared to interferon are injectables so they are painful , expensive take more time (6 months) and have many side effects like depression , body pain and itching in body .

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