Section: Medicine

Original Research Article

EVALUATION OF CLINICAL PROFILE OF PATIENTS WITH HCV INFECTION AT A TERTIARY CARE HOSPITAL

Harinder Singh Gill[1], Kiranjot Kaur[2], Manjinder Kaur[3], Satish Sachdeva[4], Sheenab Mittal[5]

[1]*MD (Medicine), Senior Resident, Department of Medicine, Government Medical College & Rajindra Hospital, Patiala, Punjab, India.*
[2]*MD (Pathology), Medical Officer (Specialist), A. P. Jain Civil Hospital, Rajpura, Patiala, Punjab, India.*
[3]*Senior Resident, Department of Medicine, Postgraduate Institute of Medical Education & Research, Chandigarh, India.*
[4]*Professor & Head, Department of Medicine, Gian Sagar Medical College, Patiala, Punjab, India.*
[5]*Blood Transfusion Officer, A. P. Jain Civil Hospital, Rajpura, Patiala, Punjab, India.*

Received *: 14/04/2025*
Received in revised form *: 06/05/2025*
Accepted *: 27/05/2025*

Corresponding Author:
Dr. Kiranjot Kaur,
MD (Pathology), Medical Officer (Specialist), A. P. Jain Civil Hospital, Rajpura, Patiala, Punjab, India.
Email: kirancheema88@gmail.com

DOI: 10.70034/ijmedph.2025.3.89

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (3); 487-491

ABSTRACT

Background: Hepatitis is inflammation of the liver and can be caused by various viruses such as hepatitis A, B, C, D, and E. The present study was conducted to evaluate clinical profile of patients with HCV infection at a tertiary care hospital.

Materials & Methods: The present prospective study was conducted on 150 patients diagnosed with HCV infection who received full course of anti HCV treatment in the form of direct acting antiviral drugs in the Medical Outpatient Department and ward of Department of Medicine of Government Medical College and Rajindra Hospital, Patiala. This study was carried out over a period of 1 year from March 2019 to February 2020. Patients were followed up at 4 and 8 weeks for clinical assessment, required investigations and to see side effects of direct acting antivirals.

Results: Most common age group involved was age 41-50 years. 70% of patients were males. 66.7% of patients were of rural background. Most common symptom was fatigue. Intravenous drug use was the main risk factor. Most common clinical feature was fatigue in Non-cirrhotic patients, anorexia in compensated Cirrhosis and jaundice and abdominal distention in decompensated cirrhosis.

Conclusion: The study concluded that the most common clinical presentation was asymptomatic (49.3%) followed by fatigue, anorexia, jaundice, abdominal distention, abdominal pain, and GI bleed.

Key words: Hepatitis C, Fatigue, Cirrhosis.

INTRODUCTION

Hepatitis refers to liver inflammation caused by viruses such as hepatitis A, B, C, D, and E. The transmission routes for these viruses differ, with hepatitis A and E primarily spreading through the fecal-oral route, while hepatitis B, C, and D are mainly transmitted through exposure to infected blood.[1] The hepatitis C virus (HCV) is a single-stranded RNA virus with a lipid envelope, classified within the Flaviviridae family. Discovered in 1989, HCV has seven major genotypes (1-7), each further divided into subtypes.[2] Hepatitis C virus (HCV) is a non-cytopathic virus, meaning its pathogenesis is largely driven by the host's immune response and metabolic factors, including oxidative stress, insulin resistance, and hepatic steatosis.[3] Hepatitis C virus (HCV) affects approximately 3% of the global population, translating to over 180 million people worldwide, and is responsible for around 700,000 deaths annually due to related complications. As a bloodborne virus, HCV is primarily transmitted through sharing injection equipment among drug users, reuse or inadequate sterilization of medical equipment, and transfusion of unscreened blood products, while less common through sexual contact and from mother to child during birth.[4] HCV infection can cause both acute and chronic hepatitis. About 20% of individuals experience early symptoms, and 15-45% may clear the virus

spontaneously within six months without treatment. However, 55-85% develop chronic infection, which can lead to progressive liver damage, fibrosis, and cirrhosis. After 20 years, 15-30% of chronically infected individuals may develop cirrhosis, which can progress to decompensated liver disease, characterized by complications like variceal bleeding, ascites, or encephalopathy. Furthermore, approximately 1-3% of individuals with cirrhosis develop hepatocellular carcinoma (HCC) each year.[5-7] Acute hepatitis C is often asymptomatic, making it rarely diagnosed in clinical practice. When symptoms do occur, they typically appear 2-12 weeks after infection and can include fatigue, nausea, abdominal pain, and mild fever. Unfortunately, the majority of acute infections progress to chronic infection, with a persistence rate ranging from 45% to over 90%, highlighting the need for early detection and treatment.[8] Patients with chronic hepatitis C often remain asymptomatic until advanced liver disease develops. Common non-specific symptoms include fatigue, vague abdominal pain, and depression, which can impact their overall quality of life. Some may also experience less common symptoms such as joint pain, muscle pain, numbness, dryness, nausea, loss of appetite, and difficulty concentrating.[8] Chronic HCV infection can lead to extrahepatic manifestations in approximately 1-2% of individuals. The most common extrahepatic condition is mixed cryoglobulinemia. Cryoglobulinemia develops symptoms and these symptoms can include fatigue, skin rashes, joint pain, and vasculitis. Other extrahepatic manifestations associated with HCV include kidney disease, skin conditions, and autoimmune disorders. Additionally, research suggests a potential link between chronic HCV and certain cancers, thyroiditis, and arthritis.[9] The present study was conducted to evaluate clinical profile of patients with HCV infection at a tertiary care hospital.

MATERIALS AND METHODS

The present prospective study was conducted on 150 patients diagnosed with HCV infection who received full course of anti HCV treatment in the form of direct acting antiviral drugs as per National Viral Hepatitis Control Programme in Medical Outpatient Department and ward of Department of Medicine of Government Medical College and Rajindra Hospital, Patiala. This study was carried out over a period of 1 year from March 2019 to February 2020. Patients of 18 years and above, having hepatitis C i.e patients with positive HCV antibodies and detectable HCV RNA in the serum were included in the study. Patients of chemotherapy with deranged liver enzymes, patients with impaired renal function, patients with hepatocellular carcinoma, pediatric patients, thalassemic patients, treatment experienced patients, patients with pregnancy were excluded from the study. Cases were selected on the basis of presence of anti HCV antibodies (by Elisa method) and detectable HCV RNA viral load in the serum. Quantitative HCV RNA viral load assessment was done by using Real-Time Polymerase Chain. Reaction (RT-PCR) methodology by Core diagnostics under NVHCP. Baseline investigations were obtained in all selected cases in the form of: HCV RNA viral load, CBC, RBS, LFTs, RFTs, PTI/INR, HBsAg, HIV. Clinical profile of all 150 HCV positive patients with detectable HCV RNA viral load was studied in form of age, gender, risk factors, occupation, residence, clinical presentation. Patients were divided into non-cirrhotic and cirrhotic. Cirrhotic patients were further divided into compensated cirrhotic and decompensated cirrhotic based on signs of decompensation like jaundice, ascites, variceal bleed and hepatic encephalopathy. Patients were put on different treatment regimens as per National Viral Hepatitis Control Programme based on cirrhosis of liver. Patients were followed up at 4 and 8 weeks for clinical assessment, required investigations and to see side effects of direct acting antivirals.

RESULTS

The maximum number of patients was between 41-50 years. The mean age in this study was 42.9 years. Out of 150 HCV positive patients, 105(70%) were males and 45(30%) were females. Out of total 150 HCV patients, 100 (66.7%) patients were from rural areas and 50 patients (33.3%) were from urban areas. Out of total 150 HCV positive patients, 102(68%) patients were non-cirrhotic, 37(24.6%) patients were compensated cirrhotic, and 11(7.3%) patients were decompensated cirrhotic.

Out of total 150 HCV positive patients, no risk factor was seen in 53(35.3%) patients. Probable risk factors found were intravenous drug use in 34(22.7%) patients, unsafe injection use in 27(18%) patients, dental treatment in 18(12%) patients, unprotected sexual practice in 15 (10%) patients, and surgery in 3(2%) patients.

Out of total 150 patients, 74(49.3%) patients were asymptomatic. Most common symptom seen was fatigue in 48(32%) patients. Other symptoms were anorexia in 28(18.7 %) patients, nausea in 25(16.7%) patients, yellowness in eyes in 11(7.3%) patients, abdominal distention in 11(7.3%) patients, abdominal pain in 2(1.3%) patients and gastrointestinal bleed in 2(1.3%) patients. Some patients had more than one symptom. Most common clinical feature was fatigue in Non-cirrhotic, anorexia in compensated Cirrhosis and jaundice and abdominal distention in decompensated cirrhosis.

Fatigue in non-cirrhotic, compensated cirrhotic and decompensated cirrhotic patients show insignificant results as p value was > 0.05. Nausea shows significant results as p value was < 0.05. Jaundice, Anorexia, Pain abdomen, Abdominal distension, Variceal bleed shows highly significant results as p value was < 0.001.

Out of 150 HCV positive patients, 3(2%) patients were found to be co-infected with Hepatitis B. These 3 patients were non-cirrhotic. Out of 150 HCV positive patients, 18(12%) patients were found to have HIV co-infection. Out of these 18 patients, 11 were non-cirrhotic and 7 were compensated cirrhotic.

Table 1: Demographic variables

Variable	Number	Percentage
Age Group		
18-20	4	2.7
21-30	37	24.7
31-40	24	16.0
41-50	39	26.0
51-60	25	16.7
61-70	19	12.7
71-80	2	1.3
Sex		
Male	105	70.0
Female	45	30.0
Total	150	100.0
Occupation		
Business	2	1.3
Farmer	30	20
Housewife	35	23.33
Labourer	33	22
Service	21	14
Student	9	6
Truck Driver	7	4.7
Other	13	8.7
Locality		
Urban	50	33.3
Rural	100	66.7
Total	150	100.0

Table 2: Severity wise distribution of study population

	Non-Cirrhotic		Compensated Cirrhotic		Decompensated Cirrhotic	
	Number	Percentage	Number	Percentage	Number	Percentage
Total 150	102	68	37	24.6	11	7.3

Table 3: Risk factors in study population

Risk factors	Number	Percentage
Not Available	53	35.3
Intra Venous Drug Use	34	22.7
Dental Treatment	18	12
Unsafe Injection Use	27	18
Unprotected Sexual Practice	15	10
Surgery	3	2
Total	150	100.0

Table 4: Clinical presentation of study population

Symptoms	Number	Percentage
Fatigue	48	32
Jaundice	11	7.3
Nausea	25	16.7
Anorexia	28	18.7
Pain abdomen	2	1.3
Abdominal distension	11	7.3
Bleed	2	1.3

Table 5: Clinical features according to severity of disease

Diagnosis	Statistic	Fatigue	Jaundice	Nausea	Anorexia	Pain abdomen	Distension	Bleed
Non cirrhotic	N	28	0	12	7	0	0	0
	%	27.5	0	11.8	6.9	0	0	0
Compensated	N	15	0	12	16	0	0	0
Cirrhosis	%	40.5	0	32.4	43.2	0	0	0
Decompensated	N	5	11	1	5	2	11	2
Cirrhosis	%	45.5	100	9.1	45.4	18.2	100	18.2
Chi square		3.125	150	8.841	29.280	25.614	150	25.614
P value		0.210	<0.001	0.012	<0.001	0.001	<0.001	<0.001
Significance		NS	HS	S	HS	HS	HS	HS

Table 6: HBsAg co-infection

HBsAg	Number	Percentage
Positive	3	2
Negative	147	98
Total	150	100.0

Table 7: HIV co-infection

HIV	Number	Percentage
Positive	18	12
Negative	132	88
Total	150	100

DISCUSSION

In this study out of 150 HCV positive patients, 39(26%) patients were in 41– 50-year age group, 37(24%) patients were in 21–30-year age group, 25(16.7%) patients in 51–60-year age group and 24(16%) patients in 31–40-year age group. The maximum number of patients was between 41-50 years. The mean age in this study was 42.9 years. In study done by Dhiman et al. on 48,088 patients in Punjab, mean age of Hepatitis C patients was found to be 42.1 years, which is comparable to present study.[10] Similar findings were observed in another study by Sood et al. (2012) done on 272 patients, in which highest prevalence was noticed in 41-60 years age group.[11]

Out of 150 HCV positive patients, 105(70%) were male, and 45(30 %) were female. Similar findings were seen in a previous study done by Mahajan et al. on 8035 patients in Punjab, in which 68.3% of total patients were males.[12]

In the present study out of total 150 HCV positive patients studied, 35(23.3%) patients were housewives, 33(22%) were labourers, 30(20%) were farmers, 21(14%) were in govt service, 9(6%) were students and 7(4.7%) were truck drivers. Gupta et al. in their study found that 32.4% patients were farmers, 29.7% were household, 22.9% were working,10% were businessman, and 4.1% were students. Results are comparable with present study.[13]

Out of total 150 HCV patients, 100 (66.7%) patients were from rural area, and 50 patients were from urban area. Similar results were seen in previous study by Mahajan et al.in Punjab on HCV positive patients in which they found that patients were more from rural population (69.8%) than urban population.[12] Another study done by Dhiman et al. (2019) also showed that majority of Hepatitis C patients (80.5 %) were from rural area.[10]

In this study, out of total 150 HCV, positive patients, 102(68%) patients were of non-cirrhosis, 37(24.66%) patients were of compensated cirrhosis, and 11(7.3%) patients were of decompensated cirrhosis. In the previous study by Gupta et al. they observed that out of total 490 HCV positive patients, 339 (69.2%) were of non-cirrhosis,120(24.48%) were of compensated cirrhosis and 31(6.32%) were of decompensated cirrhosis. These results are comparable with present study.[14] Similarly, results were seen in study by Hu et al. (2004) where they observed that out of 294 HCV positive patients 76.9% were non-cirrhotic, 20.4% were compensated cirrhotic, and 2.7% were decompensated cirrhotic.[15]

In this study, out of total 150 HCV positive patients, no risk factor was seen in 53(35.3%) patients. Probable risk factors found were intravenous drug use in 34(22.7%) patients, unsafe injection use in 27(18%) patients, dental treatment in 18(12%) patients, unprotected sexual practice in15(10%) patients and history of surgery in 3(2%) patients. Similar results were seen by Dhiman et al. in their study that the main risk factors for HCV transmission were unsafe injections, dental procedures and intravenous drug use.[10] Similarly, Sood et al. (2012) in their study on HCV positive patients identified dental treatment, history of surgery and unprotected sex as main risk factors.[11]

In this study, out of total 150 patients, most of the patients ie 74(49.3%) were asymptomatic. Most common symptoms seen was fatigue in 48(32%) patients followed by anorexia in 28(18.7%), nausea in 25(16.7%), yellowness in eyes in 11(7.3%), abdominal distention in 11(7.3%), abdominal pain in 2(1.3%) and gastrointestinal bleed in 2(1.3%) patients. Most common clinical feature was fatigue in Non-cirrhotic, anorexia in compensated Cirrhosis and jaundice and abdominal distention in decompensated cirrhosis. Symptoms of abdominal distention, abdominal pain, yellowness of eyes and variceal bleed were seen in decompensated cirrhosis patients while symptoms of nausea and anorexia were seen more in compensated cirrhosis patients. Non-specific symptoms of fatigue, nausea and anorexia were seen in 38% cases, while advanced disease symptoms of abdominal distention, jaundice and bleed were present in 10.6% cases. In previous study by Mahajan et al on 8035 HCV positive patients, 54.8 % of patients were asymptomatic while 6.7% of patients were having non- specific symptoms and 9.3 % had advanced liver disease symptoms at presentation. These results were comparable with present study.[12]

In this study, out of 150 HCV positive patients, co-infection with HBsAg was present in 3(2%) patients. All these 3 patients were non-cirrhotic and received no Hep B treatment. In previous study by Charatcharoenwitthaya et al. (2020) in 1021 HCV positive patients, twenty-seven patients (2.6%) were co-infected with the hepatitis B virus (HBV). This result is comparable to present study.[16]

In this study, out of 150 HCV positive patients, 18(12%) patients had HIV co- infection. Amongst these 18 patients, 11 were non-cirrhotic and rest all 7 were of compensated cirrhosis. All 18 patients were on Anti Retro Viral Therapy. In previous study by Maier et al. (2002) they observed that co-infection of human immunodeficiency virus was in 10% of Hepatitis C patients, which is comparable to present study.[17]

CONCLUSION

The study concluded that the most common clinical presentation was asymptomatic (49.3%) followed by fatigue, anorexia, jaundice, abdominal distention, abdominal pain, and GI bleed.

REFERENCES

1. Birajdar SV, Chavan SS, Mundhe SA, Bhosale MG. Clinical and biochemical profile of patients with viral hepatitis at tertiary care centre. Int J Adv Med.2017 Mar; 4:412-6.
2. Ibrahim AA, Allah MK, Al-Hammadi AM, Adb-Elguaad MMK. Study on HCV direct acting drugs in treatment of chronic hepatitis C. Journal of American Science. 2016;12(7):152-81
3. Irshad M, Mankotia DS, Irshad K. An insight into the diagnosis and pathogenesis of hepatitis C virus infection. World journal of gastroenterology: WJG. 2013 Nov 28;19(44):7896.
4. Karmochkine M, Carrat F, Dos Santos O, Cacoub P, Raguin G, GERMIVIC Study Group. A case–control study of risk factors for hepatitis C infection in patients with unexplained routes of infection. Journal of viral hepatitis. 2006 Nov;13(11):775-82.
5. Thein HH, Yi Q, Dore GJ, Krahn MD. Estimation of stage-specific fibrosis progression rates in chronic hepatitis C virus infection: a meta-analysis and meta-regression. Hepatology. 2008 Aug;48(2):418-31.
6. Poynard T, Bedossa P, Opolon P. Natural history of liver fibrosis progression in patients with chronic hepatitis C. The Lancet. 1997 Mar 22;349(9055):825- 32.
7. El-Serag HB. Epidemiology of viral hepatitis and hepatocellular carcinoma. Gastroenterology. 2012 May 1;142(6):1264-73.
8. Feldman M, Friedman LS, Brandt LJ, editors. Sleisenger and Fordtran's gastrointestinal and liver disease E-book: pathophysiology, diagnosis, management. Elsevier; 2020 Jun 9.
9. Chen SL, Morgan TR. The natural history of hepatitis C virus (HCV) infection. International journal of medical sciences. 2006;3(2):47.
10. Dhiman RK, Grover GS, Premkumar M, Taneja S, Duseja A, Arora S, Rathi S, Satsangi S, Roy A, MMPHCRF Investigators. Decentralized care with generic direct-acting antivirals in the management of chronic hepatitis C in a public health care setting. Journal of hepatology. 2019 Dec 1;71(6):1076-85.
11. Sood A, Sarin SK, Midha V, Hissar S, Sood N, Bansal P, Bansal M. Prevalence of hepatitis C virus in a selected geographical area of northern India: a population-based survey. Indian Journal of Gastroenterology. 2012 Sep;31(5):232-6.
12. Mahajan R, Midha V, Goyal O, Mehta V, Narang V, Kaur K, Singh A, Singh D, Bhanot R, Sood A. Clinical profile of hepatitis C virus infection in a developing country: India. Journal of gastroenterology and hepatology. 2018 Apr;33(4):926-33.
13. Gupta S, Sodhi SP, Brar GK, Bansal RN. Risk factors for hepatitis C: A clinical study. Journal of Medical Sciences. 2018 Sep 1;38(5):215.
14. Gupta S, Rout G, Patel AH, Mahanta M, Kalra N, Sahu P, Sethia R, Agarwal A, Ranjan G, Kedia S, Acharya SK. Efficacy of generic oral directly acting agents in patients with hepatitis C virus infection. Journal of viral hepatitis. 2018 Jul;25(7):771-8.
15. Hu KQ, Yang H, Lin YC, Lindsay KL, Redeker AG. Clinical profiles of chronic Hepatitis C in a major county medical center outpatient setting in United States. International journal of medical sciences. 2004;1(2):92.
16. Charatcharoenwitthaya P, Wongpaitoon V, Komolmit P, Sukeepaisarnjaroen W, Tangkijvanich P, Piratvisuth T et al. Real-world effectiveness and safety of sofosbuvir and nonstructural protein 5A inhibitors for chronic hepatitis C genotype 1, 2, 3, 4, or 6: a multicentre cohort study. BMC gastroenterology. 2020 Dec;20(1):1-5.
17. Maier I, Wu GY. Hepatitis C and HIV co-infection: a review. World journal of gastroenterology. 2002 Aug 15;8(4):577.