ORIGINAL ARTICLE

RISK FACTORS AND CLINICAL PRESENTATION OF HEPATITIS C VIRUS INFECTION

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ABSTRACT

Objective: *To study the risk factors and clinical presentation of Hepatitis C virus (HCV) infection in patients presented to a tertiary care hospital.*

Material and Methods: *This descriptive study was conducted in the Department of Medicine, Lady Reading Hospital, Peshawar, from 01-03-2004 to 28-02-2005 on patients of HCV infection diagnosed on the basis of serologic testing and HCV RNA reactivity. A questionnaire was designed comprising detailed history and general physical examination with particular emphasis on previous operative procedures, blood transfusion, tattooing, dental procedure, use of common razors, self or barber house shavings, intravenous drug abuse, injection by quacks and organ transplantation.*

Results: *Out of 100 patients, with mean age of 46.80±13.15 years, 70 were male and 30 were female patients. HCV infection was common in farmers (30%), business community (23%), house wives (10%), teachers, mechanics and Labourers (8% each), students (7%) and healthcare providers (6%). Fifty percent patients were from urban areas and 50% from rural areas. Seventy five (75%) patients had history of injections, 31% patients had some dental procedures, 14% having history of operative procedures and 7% patients giving history of blood transfusion. Pain right hypochondrium was the commonest complaint (70%) followed by pain epigastrium, nausea and vomiting (65%). Hepatomegaly and splenomegaly were observed in 38% and 10% patients respectively.*

Conclusion: *The commonest route of transmission was in judicious use of injections. The commonest clinical presentations were unexplained fatigue, aches and pains. Mass awareness programme is needed through electronic and print media.*

Key words: *Risk factors, HCV, clinical presentation.*

This article may be cited as: Haider I, Khan K, Iqbal N. Risk Factors and Clinical Presentation of Hepatitis C Virus Infection. KUST Med J 2010:2(1): 15-18.

INTRODUCTION

Hepatitis C virus (HCV) infection is a global problem and is endemic in the most parts of the world with an estimated overall prevalence of 3%.[1,2] According to WHO, more than 170 million people worldwide are infected with HCV.[3,4] There is a considerable geographical and temporal variation in the incidence and prevalence of HCV infection.

Unlike Hepatitis B virus (HBV) there are currently no immunization or chemoprophylactic interventions available to prevent infection after an occupational exposure to HCV infection. Moreover the cost of treatment and the psychological strains of the disease are enormous and exert an extraordinary burden on the economy of developing countries like Pakistan.[5,6]

HCV infection is a major cause of liver diseases and death throughout the world. Most of the patients with HCV infection will develop chronic disease. Chronic hepatitis C is usually indolent and asymptomatic but some patients can present with rapidly progressive disease.[7,8] Mortality results mainly from the development of liver cirrhosis and other complications such as hepatocellular carcinoma. In the majority of patients, extra hepatic manifestations of HCV are common. The most frequent are disabling chronic fatigue, cognitive decline, mood alterations and musculoskeletal pain.[9,10] These manifestations are unrelated to the grade of liver disease.[11]

HCV is a major cause of chronic liver disease in Pakistan and has taken over from Hepatitis B virus as the single important cause of cirrhosis and hepatocellular carcinoma in Pakistan.[3] Keeping these facts in mind the present study was conducted to review the clinical pattern and presentations of HCV infection in patients presented to a tertiary care hospital.

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Date Submitted: September 20, 2009
Date Revised: June 27, 2010
Date Accepted: June 28, 2010

MATERIAL AND METHODS

This descriptive hospital based study was conducted in Department of Medicine Postgraduate Medical Institute Lady Reading Hospital Peshawar over a period of 12 months i.e. 1st March 2004 to 28th February, 2005. Hundred (100) patients irrespective of gender and age above 16 years with the established diagnosis of HCV infection based on HCV reactivity by ELISA and PCR reactivity for HCV RNA were included in the study. Patients having concurrent infection with HBV were excluded from the study. All the patients were selected by convenient sampling technique. After formal consent, a detailed history of patients was taken and general physical and systemic examinations were carried out at the time of admission. History of previous operative procedures, blood transfusion, intravenous drug abuse, tattooing, dental procedures, contact with HCV infected patients, use of common razors, self or barber house shavings, injection by quacks, sexual activity and organ transplantation were specifically inquired. All the patients were assessed by performing complete blood count, blood urea, serum creatinine, blood glucose, prothrombin time, activated partial thromboplastin time, ALT, serum protein, albumin globulin ratio and α fetoprotein.

Statistical analysis of the results was performed for different variables by utilizing SPSS version 14.

RESULTS

Out of 100 patients, (70 male and 30 female) male to female ratio was 2.3:1. Mean age of presentation was 32+10.30 years and ranged from 16-65 years. The patients were divided in three age groups. Age group-I comprised of patients between 16-30 years and consisted of 65 patients. Age group-II comprised of patients between 31-50 years and 30 patients were present in this group. Age group-III comprised of patients between 51-65 years and contained 5 patients. Fifty two (52%) patients belonged to poor socioeconomic class having monthly income of less than 3000 rupees, 40 (40%) patients in middle class with monthly income upto 10000 rupees and 8(8%) patients in upper class having monthly income above 10000 rupees. Thirty (30%) patients were farmers, 23(23%) businessmen, 10(10%) housewives, 8(8%) patients each from mechanics, labourers and teaching community, 7(7%) students and 6(6%) healthcare providers. Fifty (50%) patients were from Peshawar district, 11(11%) patients from Mardan district, 10(10%) patients each from Charsadda, Kohat and Swat districts, 4(4%) from Mohmand Agency, 3(3%) from Nowshera district and 2(2%) patients from Waziristan Agency. Seventy five (75%) patients had history of intramuscular or intravenous injections for minor ailments, 31% had some dental procedures, 14% operative procedures and 7% patients having history of transfusion in the past. Thirty (30%) patients had none of the risk factors mentioned (Figure 1).

The commonest clinical presentations were fatigue (70%), pain epigastrium, nausea, vomiting (65%), pain right hypochondrium (55%) followed by arthralgia, body aches and non specific malaise (41%) (Table I). Fifteen (15%) patients presented with hepatic encephalopathy and all of them made good recovery. Twenty (20%) patients were asymptomatic and turned out to be HCV positive during screening for blood donation. Five (5%) patients were type 2 diabetics. Liver cirrhosis was documented in 20(20%) patients. Hepatocellular carcinoma was diagnosed in 4(4%) patients on the basis of five fold rise in α fetoprotein level. Bone marrow aplasia was observed in 1(1%) patient. Serum bilirubin and ALT were high in 75% patients, normal ALT level 20%, prolonged PT 42% and low serum albumin level in 8% patients.

CLINICAL PRESENTATION OF HCV PATIENTS

Clinical presentation	Percentage(n=100)
Fatigue	70%
Epigastric discomfort	65%
Hepatomegaly	55%
Pain right hypochondrium	55%
Arthralgia	41%
Ascites	38%
Anorexia	30%
Low grade fever	20%
Splenomegaly	10%
Hematemesis	8%
No signs and symptoms	20%

Table I

HISTORY OF RISK FACTORS

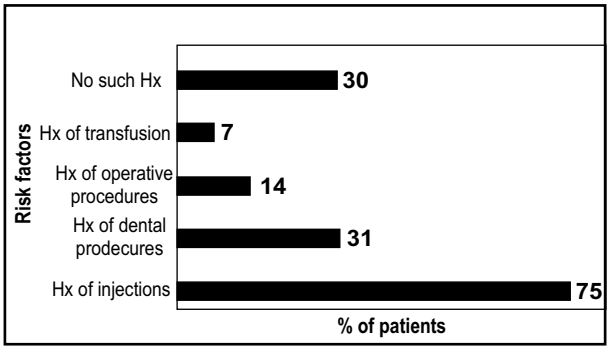

Fig. I

DISCUSSION

HCV is a rapidly growing global problem and has already overtaken HBV in the etiogenesis of chronic liver

disease in Pakistan.[12] This disease is associated with great deal of myths in our society. The poor uneducated patients are surrounded by myths, depression, superstitions and diverse ideas inhibiting their access to proper health facilities.

Male patients (70%) outnumbered the female patients (30%) with majority of patients (65%) in their 2nd or 3rd decade of life. This tendency is similar to that reported by other studies where young males are more prone to develop HCV infection and suffer from liver diseases.[13,14] This observation may just be a manifestation of gender bias in our society where males are given preference over females for therapy and hospitalization. The involvement of patients in socially reproductive age badly affects the economy of country.[10]

Majority of patients (75%) were having history of injections for minor ailments. Sheikh MA[15] reported 63% patients with history of injections. HCV transmission through inadequate sterilized syringes are well documented.[15,16] Our study reported history of dental procedures in 31% patients, previous surgical procedures 14% and blood transfusion in 7% patients. Khan BAK[16] from Sheikh Zayed Hospital Lahore reported dental procedures (39.7%) as the major source of HCV infection followed by injections (16.6%), surgical procedures (16.6%) and blood transfusion (7%). There was no history of exposure to the known risk factors in 20% patients in our study. This observation is comparable with Durrani AB[17] (20.63%) but lower than Alter et al[18] (28%).

Amongst the clinical features, fatigue was the most common symptom followed by pain right hypochondrium, epigastric discomfort, anorexia and low grade fever. The cause of fatigue in HCV infected patients with only mild liver disease is not known. There is growing evidence for involvement of central nervous system especially with alteration of serotonergic neurotransmission.[19,20]

Fifty-five (55%) patients were having stigmata of chronic liver disease in our study which is higher than that of Saleem I et al[21] (25%). Ascites was reported in 38% and splenomegaly in 10%. Both these findings are lower than those reported by Saleem I[21] (65% and 72%). Hepatocellular carcinoma is well documented complication of HCV infection.[22] This complication was reported in 4% patients, much lower than what was reported in national and international literature. Three patients (3%) in our study were diabetics. There is a documented association between HCV and diabetes. Khokhar N[23] studied 443 HCV infected patients in which 17.7% were diabetics while Adeel AB[24] reported diabetes in 20.5% patients.

CONCLUSION

There is a definite need for health education in our society and health awareness programme through print and electronic media regarding HCV infection. Proper precautionary measures must be integral part of all dental and surgical procedures.

REFERENCES

1. Armstrong GL. The prevalence of hepatitis C virus infection in the United States, 1999 through 2002. Ann Intern Med 2006; 144(10): 705-14.
2. Alberti A, Benvegnu L. Management of hepatitis C. J Hepatol 2003; 38: 104-18.
3. Shah NH, Shabir G. A review of published literature on hepatitis B and C virus prevalence in Pakistan. J Coll Physicians Surg Pak 2002; 12: 368-71.
4. Shepard CW, Finelli L, Alter MJ. Global epidemiology of hepatitis C virus infection. Lancet Infect Dis 2005; 5: 558-67.
5. National Institute of Health. NIH Consensus statement on management of hepatitis C: 2002. NIH Consens State Sci Statements 2002; 19: 1-46.
6. Grieve R, Roberts J. Economic evaluation for hepatitis C. Acta Gastroenterol Belg 2006; 65: 104-9.
7. Thomas DL, Astemborski J, Rai RM. The natural history of hepatitis C infection: Host, viral and environmental factors. J Am Med Assoc 2000; 284: 450-6.
8. Liang TJ, Rehermann B, Seef LB. Pathogenesis, natural history, treatment and prevention of hepatitis C. Ann Intern Med 2005; 132: 296-305.
9. Poynard T, Cacoub P, Ratziu V. Fatigue in patients with chronic hepatitis C. J Viral Hepat 2005; 9: 295-303.
10. Rodger AJ, Jolley D, Thompson SC. The impact of diagnosis of hepatitis C virus on quality of life. Hepatology 2003; 30: 1299-301.
11. Barkhuizen A, Rosen HR, Wolf S. Musculoskeletal pain and fatigue are associated with chronic hepatitis C. A report of 239 hepatology clinic patients. Am J Gastroenterol 2005; 94: 1355-60.
12. Hamid S, Tabassum S, Jaffri W. Hepatitis C has replaced hepatitis B as major cause of chronic liver disease in Pakistan. Hepatology 1999; 30: 212-4.
13. Seef LB. Natural history of chronic hepatitis C. Hepatology 2004; 36: 35-46.
14. Alam I, Razaullah, Haider I, Humayun M, Taqweem MA, Nisar M. Spectrum of precipitating factors of hepatic encephalopathy in liver cirrhosis. Pak J Med Res 2005; 44: 96-100.
15. Shaikh MA, Shaikh WM, Solangi GA, Abro H. Frequency and transmission mode of hepatitis C virus in northern Sindh. J Coll Physicians Surg 2003; 13: 691-3.
16. Khan BAK, Khan AA, Sharea SY. Dentistry as a possible route of hepatitis C transmission in Pakistan. Int Dent 2003; 53: 141-4.
17. Durrani AB, Rana AB, Sidiqui HS, Marwat BU. The spectrum of chronic liver disease in Balochistan. J Coll Physicians Surg Pak 2001; 11: 95-7.
18. Alter MJ, Kruszan-Moran D, Nainan OV. The prevalence of hepatitis C virus infection in the United States. N Eng J Med 2005; 341: 556-62.

19. Weissenborn K, Ennen JC, Bokemeyer M, Ahl B, Wurster U. Monoaminergic neurotransmission is altered in hepatitis C virus infected patients with chronic fatigue and cognitive impairment. Gut 2006; 55: 1624-30.

20. Laskus T, Radkowski M, Adair DM. Emerging evidence of hepatitis C virus neuroinvasion. AIDS 2005; 19: 140-4.

21. Saleem I, Ruknudin M. Liver cirrhosis in North West Frontier Province of Pakistan. J Coll Physicians Surg Pak 2002; 12: 289-91.

22. Obunbiyi JO. Hepatocellular carcinoma in developing world. Semin Oncol 2006; 28: 179-87.

23. Khokhar N. Association of chronic hepatitis C virus infection and diabetes mellitus. Pak J Med Res 2002; 41: 4-8.

24. Adeel AB, Amy CJ, Melissa S, Michael OR, Chester BG. Rate and predictors of treatment prescription for hepatitis C. Gut 2007; 56: 385-9.

CONFLICT OF INTEREST

Authors declare no conflict of interest

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