

Hepatitis patients lost to follow-up at a liver centre in a tertiary care hospital of Karachi, Pakistan — a cross-sectional descriptive study

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Abstract

Objective: To investigate the causes for loss-to-follow-up of hepatitis patients at a liver centre of a tertiary care hospital.

Methods: A representative sample of 165 patients who were lost to follow-up during 2009 to 2010 was chosen and a cross-sectional descriptive study was performed. All hepatitis patients included were screened for antibody to hepatitis C virus (HCV Ab) and hepatitis B virus surface antigen (HbsAg), and were tested through polymerase chain reaction (PCR) and genotyping. Laboratory investigations, ultrasounds, personal habits, visits to hakeems and use of other alternative medications, occupations and income per month, education, and other basic information was also recorded. Those who did not return for follow-up were contacted and inquired about their reasons for loss-to-follow-up. Based on this data, the patients were categorised into four different groups according to reasons of loss to follow up: non-compliance, alternative medication, monetary issue and poor prognosis.

Results: The entire sample size of 165 patients who were lost to follow-up was included in the study. 14 (8.5%) patients were hepatitis B virus (HBV) positive. Of these patients, 1 (7.1%) was lost due to alternative medication and the rest (n=13; 92.9%) were lost to follow-up due to non-compliance. Amongst the 151 (91.5%) hepatitis C virus (HCV) positive patients, 2 (1.3%) were lost due to monetary issues, 17 (11.3%) were lost due to alternative medication, 4 (2.6%) were lost due to poor prognosis and 128 (84.8%) were lost due to non-compliance.

Conclusion: This study shows that most patients were lost to follow-up due to non-compliance. It is important for physicians to design better counselling programmes to make the patient compliant enough to go through the complete treatment.

Keywords: Patients, Loss-to-follow, Hepatitis. (JPMA 63: 1566; 2013)

Introduction

Pakistan carries one of the world's largest burdens of hepatitis due to liver failure and hepatocellular carcinoma (HCC).¹ Hepatitis B virus (HBV) and hepatitis C virus (HCV) are the leading causes of cirrhosis and hepatocellular carcinoma. The World Health Organization (WHO) estimates that there are 350 million people with chronic HBV infection and 170 million people with chronic HCV infection worldwide.^{2,3} Hepatitis B is estimated to result in 563 000 deaths and hepatitis C in 366 000 deaths annually.⁴ Given its large population and intermediate to high rates of infection,^{2,3} Pakistan is among the worst afflicted nations.

Hepatitis D virus (HDV) is a defective virus that requires

HBV envelope to enter liver cells. HDV can worsen existing disease caused by HBV and also causes fulminating hepatitis. HDV is present either as a co-infection with HBV or as a super infection of existing HBV. Individuals having HBV-HDV co-infection may have more severe acute disease and higher risk of fulminant hepatitis.⁵⁻⁸ Persons suffering from HDV super infection have more risks of progressing rapidly to cirrhosis than individuals suffering from HBV mono-infection.⁶⁻⁹

Treatment and prevention of hepatitis infection is a great challenge. Interferon therapy is lengthy and extensive, and patients tend to drop out of the treatment programmes due to several reasons. Many patients reach a decompensated stage during follow-up and are therefore lost to further follow-up. Advanced age at infection and presence of the human leukocyte antigen (HLA) DRB1*1201-3 allele were possibly associated with a higher rate of progression to decompensated cirrhosis or HCC. The purpose of this analysis is to investigate loss-to-followup in a group of patients visiting a liver centre with

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hepatitis B, C or D.

Patients and Methods

A cross-sectional descriptive study design was chosen and ethical approval from the Ethical Review Board of Dow University of Health Sciences was taken. All hepatitis patients lost to follow-up during the period of 2009 to 2010 at a Liver Centre of Karachi were included. Loss-to-follow up was defined as those patients who did not return to the liver centre for three consecutive visits. Since their phone numbers were obtained at the beginning of their treatment, they could be contacted and inquired about their reasons for dropping out of the treatment plan. Consent was received from all participants before they were interviewed. Only patients with positive tests for hepatitis B virus surface antigen (HbsAg), antibody to hepatitis C virus (HCV Ab) or antibody to hepatitis D virus (HDV Ab) were included. Further investigation with polymerase chain reaction (PCR) was done to confirm their disease. Genotyping was performed and laboratory reports of haemoglobin levels, total leukocyte count, platelet count, direct and total bilirubin levels, serum glutamate pyruvate transaminase (SGPT) and alkaline phosphatase were recorded. The progressing disease was kept under record through ultrasound reports of liver, spleen, pancreas and gall bladder. Ascites in patients was also noted through ultrasound reports. Basic information including education level, occupations and income per month, personal habits, and visits to hakeems and use of other alternative medications was also recorded.

In all analyses, patients lost to follow up were grouped into one of the four categories: non-compliance, alternative medication, monetary issues and poor prognosis. Many patients were lost to follow up due to lack of compliance to doctors' instructions. Non-compliance was found in people who either believed the disease could not be cured by such a therapy or had family taboos associated with such continuous

medication; some of these had professional reasons to be unable to visit the doctor regularly and some were not prepared to accept the side effects of interferon therapy. Non-compliance was also seen in patients who did not have any sort of education. Patients who had a history of visiting hakeems, clergymen, spiritual healers, homeopaths and quacks in their respective villages were put in the category of loss to follow up due to alternative medication. Some patients lost to follow up either due to monetary issues or came from far off areas and could not revisit. Patients with ascites and signs of decompensation were put in the category of poor prognosis. The results were summarised using simple descriptive statistics with the help of a statistical programme, SPSS version 17.0.

The above details were available at the liver centre since it was a routine to evaluate every aspect of the patient. The forms containing all these details were filled by the doctors themselves and the students were contacted on phone by them whenever there was a case of loss-to-follow-up. We used this data for this study retrospectively.

Results

The entire sample size of 165 patients was included in the study. 14 (8.5%) patients had a positive HBsAg and 151 (91.5%) patients had a positive HCV Ab result. 3 (1.8%) of these patients had both positive HBV and HCV and none showed presence of HDV antibody. The patients ranged from 8 to 63 years of age (mean age 37.81 ± 10.75).

Of these 64 (38.8%) patients were males and 101 (61.2%) females. All the reasons of loss-to-follow up were found to be equally common in both groups (males and females).

Nine (5.5%) patients were labourers, 42 (25.5%) were housewives, 5 (3.0%) were drivers, 2 (1.2%) were shopkeepers, 2 (1.2%) were teachers, 3 (1.8%) were farmers

Table-1: Reasons for loss to follow-up according to the occupation of the patients.

Occupation	Non-Compliance (n=141)	Alternative Medication (n=18)	Monetary Issue (n=2)	Poor Prognosis (n=4)
Labourers (n=9)	6 (66.7%)	2 (22.2%)	0	1 (11.1%)
Housewives (n=42)	33 (78.6%)	7 (16.7%)	1 (2.4%)	1 (2.4%)
Drivers (n=5)	4 (80.0%)	1 (20.0%)	0	0
Shopkeepers (n=2)	2 (100.0%)	0	0	0
Teachers (n=2)	0	2 (100.0%)	0	0
Farmers (n=3)	2 (66.7%)	1 (33.3%)	0	0
Others (n=102)	94 (92.2%)	5 (4.9%)	1 (1.0%)	2 (2.0%)

Table-2: Reasons for loss to follow-up according to the distance of the residence from the liver centre.

Address	Non-Compliance (n=141)	Alternative Medication (n=18)	Monetary Issue (n=2)	Poor Prognosis (n=4)
Within Karachi (n=91)	79 (86.8%)	10 (11.0%)	0	2 (2.2%)
Outside Karachi (n=32)	25 (78.1%)	6 (18.8%)	0	1 (3.1%)
Unknown (n=42)	37 (88.1%)	2 (4.8%)	2 (4.8%)	1 (2.4%)

Table-3: Reasons for loss to follow-up according to the diagnosis of the patients.

Virus	Total Number	Non-Compliance (n=141)	Alternative Medication (n=18)	Monetary Issue (n=2)	Poor Prognosis (n=4)
Hepatitis B	14	13 (92.9%)	1 (7.1%)	0	0
Hepatitis C	151	128 (84.8%)	17 (11.3%)	2 (1.3%)	4 (2.6%)
Hepatitis D	0	0	0	0	0
Total	165	141 (85.5%)	18 (10.9%)	2 (1.2%)	4 (2.4%)

and the rest belonged to other occupations (Table-1).

Fifteen (9.1%) patients were Urdu speaking, 15 (9.1%) were Sindhi speaking, 11 (6.7%) were Punjabi speaking, 21 (12.7%) belonged to Pashtu speaking class, 5 (3%) were Balochi speaking and the rest belonged to other ethnicities.

Ninety-one (55.2%) patients were residents of Karachi, 32 (19.4%) were from outside Karachi and the residence of the rest of the 42 (25.5%) patients was unknown (Table-2).

Amongst the HBsAg positive patients, 7 (50%) had a positive HBV RNA PCR result. Amongst the HCV Ab positive patients, 148 (98%) had a positive HCV RNA PCR result. Amongst the patients positive for both HBV and HCV, 1 (33.3%) patient showed positive HBV RNA PCR as well as HCV RNA PCR result.

Amongst the HBV positive patients, 1 (7.1%) was lost due to alternative medication and the rest of the 13 (92.9%) were lost to follow-up due to non-compliance. Amongst the HCV positive patients, 2 (1.3%) were lost due to monetary issue, 17 (11.3%) were lost due to alternative medication, 4 (2.6%) were lost due to poor prognosis and 128 (84.8%) were lost due to non-compliance (Table-3).

Discussion

The above research was conducted to investigate the reasons for loss-to-follow-up of hepatitis B and hepatitis C patients. It shows that non-compliance was the major cause of loss to further follow-up with 85.5% patients. Patients tend to drop out of the treatment regimes probably due to several side effects of

interferon therapy, constant lethargy and long ongoing therapies. In a developing country like Pakistan with an illiteracy rate of 55% (according to the United Nations Educational Scientific and Cultural Organization), patients also face family problems associated with long on-going therapies, Families tend to believe in myths and legends rather than clinical therapies discouraging the patient and causing problems for their constant visits to the hospital. The fact that 66.7% labourers are non-compliant supports the theory that the working class in particular does not want a hindrance to their daily chores and stop further visits once the side effects of the therapy sets in. Persons with less education may have employment-related issues such as not having enough time off from work to attend the clinic.^{10,11} Illiteracy is another cause of non-compliance. Our data supports the fact that none of the educated people (teachers) amongst these patients are non-compliant while 78.6% housewives were non-compliant and none of these housewives had any years of education. People do not understand the importance of therapy in providing cure because they are uneducated. In a study on incidence rate and factors associated with loss-to-follow-up in a longitudinal cohort of anti-retroviral treated human immunodeficiency virus (HIV)-infected persons: an acquired immunodeficiency syndrome (AIDS) Clinical Trials Group (ACTG) Longitudinal Linked Randomized Trials (ALLRT) analysis, the risk of being lost to follow-up increased among participants who had fewer years of education.¹² Despite continuous counselling by the doctors that it is part of the treatment, they prefer discontinuing their therapy. Depression or other such psychological illness could have been another cause of

non-compliance but we did not take note of such a disease in our data.

Alternate medication was seen to be another important factor for the loss-to-follow-up because hakeems, clergymen, spiritual healers, homeopaths and quacks are very common, especially amongst the orthodox villagers of our country and people try to move to medications without many side effects so that they can carry on with their normal daily activities. More than 70% of the developing world's population still depends on the complementary and alternative systems of medicine (CAM).¹³ Pakistan has a very rich tradition in the use of medicinal plants for the treatment of various ailments, based predominantly on the Unani system of medicine, which dates back to the Indus valley civilization.¹⁴

Monetary issue is also a cause of loss to follow up. A single earning member of a large family would like to feed his family rather than spending the money on his medication. The constant visits to the doctor means that he would need to take an off from his work and that means a further decrease in his salary adding on to the monetary burden. In a study on characteristics and outcomes of adult patients lost to follow-up at an antiretroviral treatment clinic in Johannesburg, South Africa, few patients cited financial difficulty or medicine toxicity as cause of not turning up when tracked by the doctor.¹⁵ Moreover, patients who were from outside Karachi or from far off places even within Karachi are thought to have conveyance problem and monetary issues in visiting the liver centre for continuous checkups and this might be a reason adding on to the monetary issues. Top reasons for loss included lack of transportation or money and work/child care responsibilities in a study on understanding reasons for and outcomes of patients lost to follow-up in antiretroviral therapy programmes in Africa through a sampling-based approach.¹⁶

Poor prognosis was also seen to be a reason for loss-to-follow-up. Patients who are of increased age or have reached a decompensated stage of cirrhosis skip out of further visits to the doctor probably because they think the doctor cannot do anything further about their condition. In a study on incidence rate of and factors associated with loss-to-follow-up in a longitudinal cohort of anti-retroviral treated HIV-infected persons: an AIDS Clinical Trials Group (ACTG) Longitudinal Linked Randomized Trials (ALLRT) analysis, results indicate that specific subgroups of participants including those who may be at greater risk for clinical

progression, are at a higher risk of being lost to follow-up; special efforts should be made to retain such participants in follow-up.¹²

The findings from our study can help clinicians and researchers identify causes of loss-to-follow-up amongst hepatitis patients. It would also help frame out ways to reduce it amongst such patients by designing better counselling programmes and increasing awareness of such therapies in cure of these particular diseases.

Strengths of this research include the fact that all the data related to the patient's visit to other places, monetary problems, personal habits, profession and other related things was procured in the beginning of the therapy to provide us with sufficient evidence to evaluate reasons for any observed loss to follow-up.

The major limitation is that our study does not include data for comparison from patients who retained their therapy. This would have made our analysis more reliable. Most patients could not be tracked and analysis was done based on their previous record. Depression or other psychological illness present in the patient should have been accounted for as well in the data to determine non-compliance of such patients.

Bias was eliminated by using the same interviewer for every patient when the data was collected.

Conclusion

Non-compliance is found to be the major cause for loss-to-follow-up. Other not so common factors were alternative medication, monetary problems and in some cases poor prognosis. Tracking such patients is an efficient way of finding their problems and evaluating them. Better counselling programmes are the answer to saving non-compliant patients. There is a need for creating awareness about the hazards of hepatitis and the effectiveness of these therapies.

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