ORIGINAL ARTICLE
JRMI Vol. 1, No. 2, 2015

AWARENESS ABOUT THEIR DISEASE IN HEPATITIS B & C PATIENTS FROM AFGHANISTAN & PAKISTAN ATTENDING REHMAN MEDICAL INSTITUTE

Muhammad Naveed Anwar,[a] Abid Salahuddin,[b] Farah Osman,[c] Iftikhar Qayum[d]

ABSTRACT

Introduction: Hepatitis B & C are global health hazards with high levels of endemicity, incidence and prevalence. In developing countries the prevalence of Hepatitis B and C is related to lack of public health education and information, so that people are exposed to health risks for these diseases. Rehman Medical Institute (RMI), a private tertiary care hospital, located close to the Pakistan-Afghanistan border, caters to a large Afghan population suffering from both types of Hepatitis. The present study is designed to determine the level of knowledge of Pakistani and Afghan patients regarding risk factors, prevention, transmission, sequelae and treatment of these diseases.

Materials & Methods: The hospital-based cross-sectional survey was conducted at RMI for 04 months (Nov 2014 to Feb 2015). Two hundred (200) patients of Hepatitis B and/or C, of both genders and of ages 10-80 years were recruited from the Outpatients and Inpatients of the hospital through convenience sampling. Data were collected through a pretested, self-administered questionnaire translated in local languages after prior explanation and informed consent for participation in the study. Data were entered and analyzed in SPSS version 15.0. Comparisons were done for nationality (Pakistani and Afghan) and gender. The Chi Square test and the Student T test were used for significance testing, with $p \leq 0.05$ denoting significance.

Results: The response rate was 98% (196/200). Significant differences were noted in 12 out of 23 items of the questionnaire between the Hepatitis patients of both countries. In general, patients from Pakistan showed better awareness than their Afghan counterparts. However in the three items related to practices of checking partners and family members, both groups showed similar performances. Key identifiable risk factors were related to deficient knowledge about types of Hepatitis, sources of acquiring the diseases, transmission of the diseases and prevention of antenatal transmission; an additional risk factor was the low level of practice of checking partners and family members for Hepatitis.

Conclusion: Medical counseling and public awareness of patients of Hepatitis B & C is deficient in a number of important areas related to knowledge and practices, more so for the Afghan patients than those from Pakistan.

Key Words: Hepatitis B, Hepatitis C, Risk Factors, Needle Sharing, Blood Transfusion, Drug Abuse, Public Awareness.

Author Designation & Affiliation

a. Consultant Gastroenterologist, Rehman Medical Institute, Peshawar, Khyber Pakhtunkhwa, Pakistan
b. Consultant Pediatrician, Rehman Medical Institute, Peshawar, Khyber Pakhtunkhwa, Pakistan
c. TMO Gastroenterology, Rehman Medical Institute, Peshawar, Khyber Pakhtunkhwa, Pakistan
d. Director Medical Research, Rehman Medical College, Peshawar, Khyber Pakhtunkhwa, Pakistan

INTRODUCTION

The Hepatitis B virus (HBV) is blood-borne and sexually-transmitted virus. Worldwide, approximately 350-400 million people have chronic Hepatitis B infection, with prevalence estimates ranging from below 2% in low-endemic countries to greater than 8% in highly-endemic countries.[1] Approximately 2%–3% (130–170 million) of the world's population has been infected with HCV. In many developed countries, including the United States, the prevalence of HCV infection is <2%. The prevalence is higher (>2%) in several countries in Latin America, Eastern Europe, and the former Soviet Union, and certain countries in Africa, the Middle East, and South Asia; the prevalence is reported to be highest (>10%) in Egypt.[2] Keeping the above figures in mind it is not surprising that chronic Hepatitis B and C has been dubbed as" The Secret Epidemic" by former US assistant secretary of Health, Dr. Howard Koh.[3] Being diseases with major health impact, Hepatitis B and C has been studied and researched worldwide, with major emphasis on its prevalence and awareness. The economic burden of managing patients with chronic Hepatitis B and C is a major issue for a developing country like Pakistan, where lack of medical facilities and socioeconomic problems keep the patients undiagnosed until last stage of the disease is reached.[4] Ali, Syed Asad, et al.

reviewed the medical and public health literature over a 13-year period (January 1994–September 2007) to estimate the prevalence of active Hepatitis B and chronic Hepatitis C in Pakistan, analyzing data separately for the general and high-risk populations and for each of the four provinces. It included 84 publications with 139 studies (42 studies had two or more sub-studies). Data suggested a moderate to high prevalence of Hepatitis B and Hepatitis C in different areas of Pakistan. The published literature on the modes of transmission of Hepatitis B and Hepatitis C in Pakistan implicate contaminated needle use in medical care and drug abuse and unsafe blood and blood product transfusion as the major causal factors.[5] In another study a cross-sectional sample of adult injection drug users (IDUs) was taken in Kabul, Afghanistan, from June 2005 through June 2006. It showed that prevalence of HCV and high-risk behavior are alarmingly high. A total of 464 participants were enrolled; 463 were male. Fourteen participants (3.0%, 95% CI 1.7%–5.1%) were infected with HIV, 30 (6.5%, 95% CI 4.2%–8.7%) were positive for HBsAg, 170 (36.6%, 95% CI 32.2%–41.0%) were infected with HCV, and 7 (1.5%, 95% CI 0.6%–3.1%) were co-infected with HIV and HCV.[6] In yet another study conducted by Qureshi, H., et al. estimated the national prevalence of Hepatitis B and C as 2.5% and 4.8 % respectively, reflecting a combined infection rate of 7.6% in general population.[7] Although in this survey KPK has the lowest burden of Hepatitis B and C patients, the bulk of Afghan patients coming to KPK for medical facilities make a big contribution to the number of patients with chronic Hepatitis B and C.[8] The above figures show the burden and threat imposed by the chronic Hepatitis B and C infection on our health system. Considering the high cost of managing patients with chronic Hepatitis B and C patients, awareness and education regarding ways to curb further spread of these infections seem to be the most cost effective solution.

The present study aimed to provide data regarding the possible deficiencies in knowledge that could have been risk factors in the patients of Hepatitis B and C attending RMI. Knowledge gained from the study would be utilized for formulating a public health / awareness policy and campaign for both Pakistani and Afghan populations so that effective prevention can be achieved.

Objectives of the study were: to determine the level of awareness and knowledge about their diseases in patients of Hepatitis B & C, its transmission and prevention, treatment and sequelae; to identify possible gaps in knowledge regarding Hepatitis B and C that could have been risk factors for acquiring and/or transmitting the disease; to identify possible preventable and non-preventable risk factors for Hepatitis B & C that could form a basis for future public awareness / preventive campaigns.

MATERIALS & METHODS

The present hospital-based cross sectional survey was conducted at Rehman Medical Institute (RMI), Peshawar for 04 months (November 2014 to February 2015). The sample included 200 Afghan and Pakistani nationals between the ages of 10 and 80 years who were either newly diagnosed and known Hepatitis B and C positive inpatients or being seen as outpatients in RMI during the study period. Convenience sampling was used to collect data on a pretested one-page questionnaire, translated in local languages, concerning basic knowledge of HBV and HCV, their mode of transmission, risk behaviors, prevention, treatment and complications that was distributed among Hepatitis B and C positive patients after providing relevant information and obtaining informed consent. The first section of the questionnaire consisted of demographics such as age, gender, nationality, marital status. The second part included questions related to knowledge and awareness of Hepatitis B, Hepatitis C, modes of transmission, treatment and sequelae of infection. The study was conducted after

approval from the RMI Research Ethics Committee (RMI-REC). SPSS version 15.0 was used for data entry and analysis. Measures of occurrence, central tendency and dispersion were calculated. Comparisons were based on Pakistani and Afghan nationalities and also by gender. The Chi Square test and the Student T test were used for significance testing as indicated, for qualitative and quantitative variables respectively, with $p \leq 0.05$ denoting significance. Possible risk factors based on deficiencies in knowledge were derived and classified as potentially preventable and non-preventable so that a public health awareness and education campaign could be designed for future.

RESULTS

Table 1 provides the demographic data of 196 subjects (86 from Pakistan, 101 from Afghanistan) by nationality. The frequency distributions of differences by gender, marital status and age groups were not significant; however the frequency differences for types of Hepatitis showed significance ($p<0.001$).

Table 1: Demographic data of subjects by nationality (n=196). Totals vary for each variable depending on number of responses.

#	Variables	Pakistan (n=86)	Afghanistan (n=101)	Total	p value
1.	**Gender**				
	Male	53	64	117	0.81
	Female	33	37	70	
2.	**Marital Status**				
	Married	65	81	146	0.55
	Unmarried	19	19	38	
3.	**Age Groups (years)**				
	1-10	-	02	02	0.86
	11-20	07	08	15	
	21-30	13	20	33	
	31-40	12	15	27	
	41-50	16	18	34	
	51-60	18	15	33	
	61-70	08	12	20	
	71-80	04	04	08	
	>80	01	-	01	
4.	**Hepatitis Status**				
	Anti HCV Positive	50	31	81	<0.001
	HBsAg	02	13	15	
	HBV	34	57	91	

Tables 2a, 2b & 2c depict the knowledge of patients from Pakistan and Afghanistan about Hepatitis B&C, its investigations and the treatment available respectively. Significant differences are seen in patients of the two countries in terms of types of Hepatitis known to them, the sources of acquiring Hepatitis, transmission of Hepatitis and prevention of antenatal transmission of Hepatitis (Table 2a).

Table 2a: Knowledge of Patients (n=196) about Hepatitis by nationality. Totals vary for each variable depending on number of responses.

#	Variables	Pakistan	Afghanistan	Total	p value
1.	**Type of Hepatitis known?**				
	HAV only	-	-	-	
	HBV only	01	-	01	
	HCV only	01	-	01	
	HAV & HBV	01	05	06	<0.001
	HAV & HCV	-	04	04	
	HBV & HCV	22	21	43	
	HAV & HBV & HCV	39	20	59	
	None	18	52	70	
2.	**Source of Hepatitis?**				
	Partner	04	07	11	
	Parent	-	03	03	<0.001
	Blood related	50	21	71	
	Other sources	10	13	23	
	Don't know	20	55	75	
3.	**Asymptomatic Hepatitis?**				
	Yes	46	41	87	0.166
	No	32	48	80	
	Don't know	06	11	17	
4.	**Transmit to others?**				
	Yes	64	58	122	0.04
	No	14	31	45	
	Don't know	07	11	18	
5.	**Transmit to offspring?**				
	Yes	53	36	89	0.001
	No	18	35	53	
	Don't know	13	28	41	
6.	**Prevent antenatal transmission?**	40	15	55	
	Yes	27	54	81	<0.001
	No	18	29	47	
	Don't know				
7.	**How to prevent antenatal transmission?**				
	C/section	07	02	09	0.001
	Injections/Medications	17	11	28	
	Breast /Bottle feeding	12	04	16	
	Don't know	46	79	125	
8.	**How transmitted to others?**				
	Food	01	07	08	
	Using same utensils	03	03	06	
	From Parents	-	02	02	
	Needle stick	13	10	23	0.076
	Only by touch	01	02	03	
	Don't know	17	33	50	
	Combined sources	50	44	94	

Table 2b shows the knowledge of patients from Pakistan and Afghanistan about investigations for Hepatitis. Significant differences were found for knowledge of special investigations for Hepatitis between patients of the two countries.

Table 2b: Knowledge of Patients (n=196) about investigations for Hepatitis by nationality. Totals vary for each variable depending on number of responses.

#	Variables	Pakistan	Afghanistan	Total	p value
1.	**Any special investigations required?**				
	Yes	40	19	59	<0.001
	No	44	81	125	
2.	**Which type of special investigations?**				
	PCR (Qualitative)	32	12	44	
	Viral Load	01	-	01	
	Genotyping	-	01	01	0.001
	HBe antigen	03	05	08	
	Multiple	06	01	07	

Table 2c depicts the knowledge of patients of Pakistan and Afghanistan about treatment of Hepatitis. Significant differences were found for the duration of treatment, outcome of untreated Hepatitis and awareness of follow up for the disease.

Table 2c: Knowledge of Patients (n=196) about treatment of Hepatitis by nationality. Totals vary for each variable depending on number of responses.

#	Variables	Pakistan	Afghanistan	Total	p value
1.	**Is there treatment?**				
	Yes	79	92	171	0.429
	No	01	04	05	
	Don't know	05	04	09	
2.	**Everyone needs treatment?**				
	Yes	61	73	134	0.996
	No	15	18	33	
	Don't know	08	10	18	
3.	**Types of treatment**				
	Injections	22	28	50	
	Tablets	10	16	26	0.163
	Both	37	29	66	
	None	13	24	37	
4.	**How long is treatment?**				
	0-6 months	26	20	46	
	06-12 months	32	29	61	0.024
	12-18 months	03	16	19	
	Lifelong	02	02	04	
	Don't know	20	32	52	
5.	**Outcome of untreated Hepatitis?**				
	Liver failure	38	29	67	
	Bleeding (varices)	02	01	03	
	Ascites	04	-	04	
	Liver cancer	04	02	06	0.008
	Combined outcomes	17	12	29	
	All	01	-	01	
	No	12	44	56	
	Others	05	13	18	
6.	**Aware of follow up for disease?**				
	Yes	50	29	79	<0.001
	No	32	68	100	
	Don't know	02	01	03	

Table 3 provides data about the practices regarding Hepatitis by the patients of Pakistan and Afghanistan. There were no significant differences for the practices of Checking partner status, Checking family members or Checking all or some family members.

Table 3: Practices of Patients about Hepatitis (n=196) by nationality. Totals vary for each variable depending on number of responses.

S #	Variables	Pakistan	Afghanistan	Total	p value
1.	**Checked partner status?**				0.867
	Yes	32	36	68	
	No	45	58	103	
	Don't know	04	06	10	
2.	**Checked family members?**				0.565
	Yes	34	35	69	
	No	50	63	113	
	Don't know	01	03	04	
3.	**Checked entire family or some of them?**				0.473
	All	18	21	39	
	Some	17	15	32	
	None	46	62	109	
	Don't know	03	01	04	

DISCUSSION

The importance of patients' awareness about their disease has been a cornerstone of medical practice since time immemorial. An informed patient is considered as one of the biggest assets to proper and successful management of the disease by the physician. Although patients may gain information about their diseases from a variety of sources, the physician should be the main and most authentic source of relevant information about disease management and other aspects. Thus physicians should make it their duty to remain up-to-date in their own knowledge and also teach patients about their diseases as part of public health promotion. Such guidelines for patient counseling are available and useful.[9,10]

The present study has brought out this important aspect of Viral Hepatitis, a disease that commonly affects patients of Pakistan and Afghanistan; both knowledge and practices relating to improved management and quality of life were lacking in many aspects in both countries. This can be taken as a reflection of lack of Physician education of patients, something essential for these chronic diseases. Though there were more cases from Afghanistan, in general the patients from Pakistan were significantly more aware about various aspects of Hepatitis as compared to their Afghan counterparts (Tables 1, 2a, 2b & 2c). Some of the important awareness areas related to knowledge about the types of Hepatitis, their sources, transmission patterns, antenatal transmission and prevention of transmission (Table 2a); furthermore, knowledge about the laboratory tests for Hepatitis were also deficient and significantly different between patients of the two nationalities (Table 2b). Though both groups did better in knowledge about treatment (Table 2c), yet three out of six items showed significant differences between Pakistan and Afghan patients, with Pakistan patients performing better.

Regarding practices related to checking of partners and family members for Hepatitis, patients from both countries did poorly, with the majority not following safety practices of screening for hidden Hepatitis among partners and family members (Table 3); no significant differences were obtained for this item.

A large scale study based on meta-analysis for the years 2003-2011 from Afghanistan[8] showed that only 1.9% of patients and 33.9% of Health Care

Workers (HCW) were aware of Hepatitis B; moreover obstetricians in Kabul, the capital city, performed very few tests to screen for antenatal Hepatitis transmission and Sexually Transmitted Diseases (STD).

A few studies have been done in Pakistan regarding awareness of Hepatitis among patients. A study done in Karachi, Pakistan in 2010[11] showed a satisfactory level of awareness of Hepatitis B and C, though the study subjects were visitors (presumably better educated) attending a Hepatitis Awareness Mela. Similarly another study conducted on 985 patients and their attendants at Military Hospital, Rawalpindi, Pakistan in 2010-11[12] showed a good awareness response of 61% to knowledge about Hepatitis B and 39% to its vaccine; most subjects were from rural areas and had education up to the Matric level.

A more recent publication[13] on knowledge of risk factors for Hepatitis C conducted in rural Sindh, Pakistan in 2015 on Hepatitis C Virus (HCV) positive (n=344) and negative (n=176) patients revealed that majority of HCV positive patients had serious misperceptions regarding transmission of the disease (through water, food, heat & mosquitoes); these patients were also more likely to have used multiple injections for therapeutics, had more surgical operations, shaved at barber shops and shared toothbrushes, razors and miswak as compared to the HCV negative group.

A Malaysian study[14] conducted in 2007-2008 on 483 Hepatitis B patients attending a Hepatology Outpatients Clinic of Malaya Medical Center showed good levels of knowledge except some areas with significant lack of knowledge despite most patients having at least secondary level education. The mean score on a 20-item questionnaire was 12.57 ± 4.40 /20; major areas of deficient knowledge were the nature of the disease, the symptoms and some aspects of transmission such as tattooing and sharing of utensils. Younger age, increasing duration of disease and higher education levels were significant predictors of the knowledge scores; presence of cirrhosis was associated with lower scores.

A small scale study on 181 patients of Hepatitis B from Turkey[15] conducted in 2012-2013, showed satisfactory levels of knowledge regarding HBV infection, transmission and ill effects of the disease; the majority had also vaccinated their family members. However the authors conclude that this was because of the higher education level of these patients and recommend the use of educational interventions as a mass awareness policy.

Although these studies may be taken to reflect the situation in the developing world, more surprising are the findings of a study published in the USA in 2012 on patients who tested positive for Hepatitis C in the NHANES 2001-2008 study;[16] only 49.7% were aware of their positive HCV status before being notified by the NHANES.

An Australian (where the disease is not common) study[17] conducted in 2012 on 55 patients of Hepatitis B attending the outpatient clinics of three Melbourne hospitals showed high levels of knowledge of transmission routes, but lower levels of other areas particularly sources of spread and sequelae of their disease; the overall mean score was 7.5/12 with higher scores among patients having a family member diagnosed with Hepatitis B and those routinely consulting on physician for their disease.

Thus it appears that the knowledge and practices of patients of Hepatitis varies from country to country with associations related to their education status, interaction with their physicians, family members with the disease and other factors related to public health awareness campaigns that are more common in developed countries. It becomes imperative then for physicians to counsel their patients on all aspects of Hepatitis related to knowledge and practices of its transmission, management, prevention and quality of life.

Conclusions

Major gaps were highlighted in knowledge and practices for effective management of Hepatitis B and C among patients from Pakistan and Afghanistan attending the outpatient clinics of Rehman Medical Institute Hospital, Peshawar, KP, Pakistan.

Recommendations

Counseling of patients by their physicians remains the only viable and feasible option to increase awareness of Hepatitis among the victims of the disease. Other factors like education level, public awareness campaigns, etc. are beyond the scope of the individual physician treating patients of the disease, but must also be pursued by relevant authorities. A well-aware patient is one of the prime determinants to enable quality of life to the long-term sufferers of Hepatitis B and C.

Limitations

Data may not be representative of the actual awareness levels in both Pakistan and Afghanistan, as it is based on only the cases referred to Rehman Medical Institute Teaching Hospital, Peshawar; a larger epidemiological study would be useful to identify the true situation on the ground.

REFERENCES

1. Butler JRG, Korda RJ, Watson KJR, Watson DAR. The impact of chronic Hepatitis B in Australia: projecting mortality, morbidity and economic impact. Canberra: Australian Centre for Economic Research on Health. 2009.
2. Alter, Miriam J. Epidemiology of Hepatitis C virus infection. World Journal of Gastroenterology. 2007 May 07;13(17):2436-41.
3. Koh HK. "Viral Hepatitis: The Secret Epidemic." Testimony before the Committee on Oversight and Government Reform. US House of Representatives; June 17, 2010.
4. Lavanchy D. The global burden of Hepatitis C. Liver International. 2009;29(s1):74-81.
5. Ali SA, Donahue RMJ, Qureshi H, Vermund SH. Hepatitis B and Hepatitis C in Pakistan: prevalence and risk factors. Int J Infect Dis. 2009 January;13(1):9-19.
6. Todd CS, Abed AMS, Strathdee SA, Scott PT, Botros BA, Safi N, et al. HIV, Hepatitis C, and Hepatitis B infections and associated risk behavior in injection drug users, Kabul, Afghanistan. Emerging infectious diseases. 2007 September;13(9):1327-31.
7. Qureshi H, Bile KM, Jooma R, Alam SE, Afridi HUR. Prevalence of Hepatitis B and C viral infections in Pakistan: findings of a national survey appealing for effective prevention and control measures. EMHJ 2010;16(Supplement):S15-23.
8. Khan S, Attaullah S. Share of Afghanistan populace in Hepatitis B and Hepatitis C infection's pool: is it worthwhile? Virology Journal 2011;8:216-12.
9. Centers for Disease Control (CDC). A guide to comprehensive Hepatitis C counseling and testing. (online manual). Accessed September 10, 2015. Available from: http://www.cdc.gov/Hepatitis/resources/professionals/pdfs/counselingandtestingpc.pdf
10. American College of Gastroenterology (ACG). Hepatitis C treatment resource kit for gastroenterologists and physician extenders from the American College of Gastroenterology. (online manual). Accessed September 10, 2015. Available from: http://www.s3.gi.org/physicians/institute-HCVTreatmentResourceKit.pdf
11. Abbas M, Hussain MFA, Raza S, Shazi L. Frequency and awareness of Hepatitis B and C in visitors of Hepatitis Awareness Mela. JPMA. 2010 Dec;60:1069-71.
12. Khan AU, Bangash RY, Tariq KM, Hussain MZ. Mirza SA, Naseer M. Awareness about Hepatitis B in patients and attendants. JRMC. 2012;16(2):198-9.
13. Ali A, Khalid SN, Qureshi H. Assessment of Knowledge Regarding Risk Factors of Hepatitis C Virus Transmission and Options to avoid them. International Journal of Collaborative Research on Internal Medicine & Public Health. 2015;7(9):172-85.
14. Mohamed R, Ng CJ, Tong WT, Abidin SZ, Wong LP, Low WY. Knowledge, attitudes and practices

among people with chronic Hepatitis B attending a hepatology clinic in Malaysia: A cross sectional study. BMC Public Health. 2012;12:601-14.
15. Gürakar M, Malik M, Keskin O, İdilman R. Public awareness of Hepatitis B infection in Turkey as a model of universal effectiveness in health care policy. Turk J Gastroenterol. 2014;25:304-8.
16. Denniston MM, R. Klevens M, McQuillan GM, Jiles RB. Awareness of infection, knowledge of Hepatitis C, and medical follow-up among individuals testing positive for Hepatitis C: National Health and Nutrition Examination Survey 2001-2008. Hepatology. 2012;55:1652-61.
17. Dahl TFM, Cowie BC, Biggs BA, Leder K, MacLachlan JH, Marshall C. Health literacy in patients with chronic Hepatitis B attending a tertiary hospital in Melbourne: a questionnaire based survey. BMC Infectious Diseases. 2014;14:537-45.

Corresponding Author

Dr. Muhammad Naveed Anwar, Consultant Gastroenterologist, Rehman Medical Institute, Peshawar, Khyber Pakhtunkhwa, Pakistan.
Email: naveed.anwar@rmi.edu.pk

Submitted for Publication: October 15, 2015.
The authors have no conflict of interest. All authors contributed substantially to the planning of research (MNA, AS, IQ), questionnaire design (MNA, IQ), data collection (MNA, AS, FO), data analysis (IQ) and write-up (MNA, IQ) of the article. The authors agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

This article may be cited as:
Anwar MN, Salahuddin A, Osman F, Qayum I. Awareness of Hepatitis B and C patients from Afghanistan and Pakistan attending Rehman Medical Institute about their disease. J Rehman Med Inst. 2015 Jul-Dec;1(2):14-22.