Frequency of Hepatitis B, C and Human Immunodeficiency Virus (HIV) among residents of border area (Wagah Pind) Lahore

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ABSTRACT

The objective of this study is to estimate the prevalence of Hepatitis B, C and HIV among residents of border area of Wagah Pind Lahore through active disease surveillance. A cross-sectional descriptive epidemiological study. At Federal Government Dispensary and Health Check Post Wagah Border, Wagah Village Lahore. The study was performed from 25th Jan'2017 to 7th July'2017.The Screening of Hepatitis B, Hepatitis C and HIV done. Among 100 residents of border area, 62.0% were males and 38.0% females with ages ranging between 41-50 years. Among the participants, 3.0% were positive for HBsAg, 7.0% for Anti-HCV and none of the participants was found positive for HIV. Amongst the residents of Wagah village near Border, the burden of disease for Hepatitis C is maximum that is 7% or 70 per 1000 individual while that of HIV is nil which implies that blood borne infection is seen probably due to contaminated instruments or syringes, rather than blood itself.

Keywords: Prevalence, Hepatitis B virus, Hepatitis C virus, Human immunodeficiency virus, Wagah Border,

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INTRODUCTION

Infectious diseases including viral hepatitis and human immune deficiency constitute major health issues. Viral hepatitis is considered potential main health problem that can be due to numerous etiologic agents. Such kind of infections are prevalent globally, however their incidence differs in different areas[1]. HBV (hepatitis B virus), HCV (hepatitis C virus) and HIV (human immunodeficiency virus) diseases are leading health issues in Pakistan with a significant morbidity and mortality, especially in developing countries[2]. According to an assessment 2 billion individuals have been contaminated with hepatitis B virus and over 360 million people have recurring liver diseases worldwide. Approximately, 6.2 million individual die each year due to Hepatitis B virus infectivity.

According to an estimate 150 million individuals are persistently infected with Hepatitis C virus and above 3.5 million individuals are expected to die each year due to liver diseases associated with hepatitis C worldwide[3]. The HIV global epidemic continues to increase in various regions of world, mostly in South and Southeast Asia, Southern Africa, East Asia, Central Asia and Eastern Europe[4]. More than 70 million people have been infected and roughly 35 million individuals have died owing to HIV. Worldwide, 36.7 million individuals had HIV infection at end of the year 2015[5].

Survey indicated that HBsAg prevalence was 2.5% while prevalence of anti HCV antibodies was 4.8 percent, reflecting a population pool of almost thirteen million persistent hepatitis B and hepatitis C carriers[6]. There were 98,000 HIV cases in Pakistan, with an overall general population prevalence of less than 0.05%[7]. Impacts of Hepatitis B & C affect economy of the country by reducing the healthy work force and simultaneously causing rise in health expenditure for the treatment whereas the help of good preventive care can effectively avoid all this altogether[8]. The risk of spread of these diseases make the working conditions difficult for healthcare workers[9]. Hepatitis B is a viral infection that causes both acute and chronic liver disease[10]. It is a viral disease and is transmitted through three major mechanisms namely: mother-to-child, percutaneously and sexual contact[11]. Hepatitis C Virus is a DNA virus and is a major cause of chronic liver disease and thus ending in either Cirrhosis of Liver and subsequent death or Hepatocellular carcinoma leading to death[12]. Its complications are portal

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hypertension, cirrhosis of liver, ascites and esophageal varicose[13]. HIV is a retrovirus that requires help from the cells of a host to replicate and have long latent periods between infection and the development of symptoms, leading to death[14]. It is spread by sexual contact, wounds contamination or mucous membranes through contaminated blood, parenteral contact to blood & blood instruments and from infected mother to her fetus/infant)[15].

The international standards about disposable needles use for nose and ear piercing, blood transfusion, syringes and sterilized surgical and dental instruments are all ignored and thus the prevalence of blood borne disease is phenomenally high moreover the shaving from community barbers and tattooing are all contributing to this rise of disease prevalence[16]. Amongst the psychiatric patients the prevalence of hepatitis B & hepatitis C is found to be high[17]. The menace of IV drug abusers, injecting drugs are the major transmission source of HBV, HCV and HIV[18].

Hepatitis B, C and HIV are leading public health threats which deteriorate the quality of life of population. Few studies are available to provide a clear picture regarding HBV, HCV and HIV prevalence in Pakistan. Wahga Border is an area where these diseases are believed to be more prevalent due to cross-border travelling and interaction. The residents there have half of their close relatives in Pakistan and half in India. Therefore, it is significant to conduct a study regarding prevalence of Hepatitis B, C and HIV there. The objective of the study is to know the prevalence of Hepatitis B & C and HIV infection amongst the residents of Wagah village.

METHODOLOGY

In cross-sectional descriptive epidemiological study. Screening of Hepatitis B, Hepatitis C and HIV was done through serology KIT method for quick, economical and reliable results.

The sample is selected randomly out of sampling frame, by door to door visit on a randomized street and every other house was knocked and interview conducted by me and my team member Paramedics. Total of 100(N) preformed questionnaires was used as a tool to collect the sample and blood is drawn for free testing as an incentive to the public. A questionnaire was developed and was filled by taking interviews of the house hold members. Male members of the team of Paramedics Questioned the male household while the Female Household were questioned and interviewed by female paramedics. The questions were mainly history of Piercing, tattooing, visit to a quack for any intervention including gynecological and Obstetric procedures like Dilatation and Curettage. Moreover, history of any surgical or dental procedure also sought. Socio economic status and monthly income also inquired. Blood samples collected and tested by serological screening KITs. The residents in this area were chosen for the study because, their half of the family is in Pakistan and the other half in India so they virtually travel all the time or their spouse travel frequently. The residents of Wagha village are included in the study of all age group and gender whereas the visitors or the people who are living in villages other than the Wagha village are excluded. The inclusion/exclusion criteria are all the household who were residents of the village were selected and the household having guests from residing out of the village were excluded.

The study was conducted from first week of February' 2017 to end of June'2017 the door to door survey was done on 16th, 17th and 18th March' 2017. About 33 households were interviewed daily. The collection and interpretation took about one month. Statistical Package SPSS – 20.0 was used for interpretation thus results and conclusion drawn. The data collection, compilation and interpretation done at Federal Government Dispensary and Health check post Wagha Boarder. Verbal permission requested from respondents. Privacy and confidentiality maintained as per principles laid down in Helsinki Declaration of Bioethics.

RESULTS

Depicts that out of 100 participants, 3 (3.0%) were found positive for HBsAg. Likewise, among 100 participants, 7 (7.0%) were found positive for Anti-HCV. Result shows that none of the participants was found positive for HIV. (Table-I)

Table-I: Screening results (N=100)

Parameters	Results	Frequency
HBsAg	Positive	03%
	Negative	97%
AntiHCV	Positive	7%
	Negative	93%
HIV	Positive	0%
	Negative	100%

Amongst 15 participants who were up to 30 years old, all were negative for HBsAg. Among 85 participants who were more than 30 years old, 3 (3.0%) were positive and 82 (82.0%) were negative for HBsAg. The results were found statistically insignificant (p-Value = 0.82). While in 15 participants who were up to 30 years old, 2 (2.0%) had anti HCV positive and 13(13.0%) had negative. Likewise, among 85 participants who were more than 30 years old, 5 (5.0%) had anti HCV positive and 80 (80.0%) had negative. The results were found statistically insignificant (p-Value = 0.12).

Table-II: Association between history of gynecological/obstetrical intervention and anti HCV. (N=100)

History of Gynecological/Obstetrical Intervention	Anti HCV	
	Positive	Negative
Yes	2 (2.0%)	11 (11.0%)
No	0 (0.0%)	25 (25.0%)

Chi square=3.39
df=2
p-Value=0.18

The study demonstrates that among 13 participants who had history of gynecological/obstetrical intervention, all were

negative for HBsAg. Among 25 participants who had no history of gynecological/obstetrical intervention, all were negative for HBsAg. While among 62 participants for whom such history was not applicable, 3 (3.0%) were positive and 59 (59.0%) were negative for HBsAg. The results were found statistically insignificant (p-Value = 0.38). (Table-II) Among 13 participants who had history of gynecological/obstetrical intervention, 2(2.0%) had anti HCV positive and 11 (11.0%) had negative. Among 25 participants who had no history of gynecological/obstetrical intervention, all had anti HCV negative. While among 62 participants for whom such history was not applicable, 5 (5.0%) had anti HCV positive and 57 (57.0%) had negative. The results were found statistically insignificant (p-Value = 0.18). (Table-III) Among 6 participants who had extra marital relations, all were negative for HBsAg. While among 94 participants who had no extra marital relations, 3 (3.0%) were positive and 91 (91.0%) were negative for HBsAg. The results were found statistically insignificant (p-Value = 0.65). Among 6 participants who had extra marital relations, all had anti HCV negative. Among 94 participants who had no extra marital relations, 7 (7.0%) had anti HCV positive and 87 (87.0%) had anti HCV negative. The results were found statistically insignificant (p-Value = 0.48).

Table-III: Association between having extra marital relations and HBsAg &Anti HCV. (N = 100)
(No case of HIV was detected in the sample population (n)

Having Extra Marital Relations	HBsAg		Anti HCV	
	Positive [n(%)]	Negative [n(%)]	Positive [n(%)]	Negative [n(%)]
Yes	0 (0.0%)	6 (6.0%)	0 (0.0%)	6 (6.0%)
No	3 (3.0%)	91 (91.0%)	7 (7.0%)	87 (87.0%)

Hepatitis B
Chi square=0.19
df=2
p-Value =0.48

Hepatitis C
Chi square=0.48
df=2
p-Value =0.65

DISCUSSION

Hepatitis B, C and HIV are major health concerns not only in Pakistan but also among developing countries with considerable morbidity and mortality. These diseases are considered significant due to their pro long infection, carrier state and several debilitating disorders that can finally be fatal. Keeping in mind such issues, current study was conducted to assess the prevalence of Hepatitis B, C and HIV among residents of Wahga Pind, Lahore. When screening was done among study area population, 3.0% participants were positive for hepatitis B and 7.0% for hepatitis C while none of the participants was positive for HIV. Another study done in Libya by Daw and coworkers had similar out comes with highest percentages of Hepatitis B & C while very low HIV[8]. During study past history of the participants was also assessed and found that 4.0% participants ever received blood transfusion which could be a cause of hepatitis B, C and HIV if proper screening is not done before transfusion. The results of the study performed by Junejo and fellows indicated that more participants received blood transfusion[13]. Study disclosed that major proportion (88.0%) of participants received injection or intravenous fluids. Minimum use of such practices is useful and helps in preventing people from hepatitis B, C and HIV infections. The findings of our study are comparable with the study carried out by Kordi and Wallace who also confirmed that[15].

To acquire appropriate outcomes, a group of one hundred respondents was included in the study and found that only 15.0% participants were up to 30 years old and massive portion (85.0%) was more than 30 years old. A recent study carried out among population of southern Punjab by Aslam and coworkers, showed almost similar results[19]. The results of our study confirmed that male participants were in majority (62.0%) while the study done in Himalayan state of India by Adhikari and associates indicated that female participants were in majority[20]. The results of our study are much better than a recent study performed by Ambreen and partners who reported prevalence for Hepatitis B[21]. Role of better education can never be disregarded because educated population is more aware about the mode of spread of infectious diseases and adopt maximum safety measures for prevention. But it was very disappointing that large numbers (77.0%) of participants were illiterate and remaining little portion (23.0%) was literate. The results of the study carried out by Kalsoom and colleagues are much better than our study outcomes who reported in their study that major proportion was of literate participants while only participants were illiterate[22]. It was found during study that significant majority (98.0%) of the participants were married while only 2.0% were unmarried. This corresponds to the findings of the study undertaken by Kerubo and teammates who stated that most of the participants were married[23]. Study further indicated that 9.0% respondents had up to 5 family members and majority (91.0%) had more than 5 family members. Virtually similar results were also obtained from a most recent study conducted by Okonkwo and partners who confirmed that majority had more than 5 family members[24].

It was observed that mainstream of study area population visited dentist owing to dental problems as more than half (62.0%) participants had history of dental procedures. An increase in the use of intravenous fluids or injection is being observed these days. Same scenario was also observed among study area population. Frequent visits to barber could be source of infections like hepatitis B, C and HIV. These barbers should be visited only for hair cutting, not for regular shave while use of new razors and sterilized scissor and combs should be ensured. Study indicated that 60.0% participants visited barbers for shave. Similar results were also attained from the study done by Junejo and fellows, for shave[13]. A recent study conducted in South Punjab by Aslam and collaborators confirmed prevalence of HBV and HCV[19]. It is appalling to note that 6.0% respondents of study area population had extra marital relationships. Virtually same results were also provided by the study conducted by Adhikari and associates who confirmed[20] Surgical and dental procedures can be held responsible for the transmission of hepatitis and other

infectious diseases, if instruments are not sterilized adequately. The results of our study indicated that 11.0% participants had history of surgical procedure while the study undertaken by Kalsoom and colleagues confirmed it[22].

CONCLUSION

The use of unsterilized instruments by unqualified medical practitioners while performing various surgical procedures and unethical use of injections, is the main cause of blood borne diseases like hepatitis B & C.

Recommendations: This blood Borne Contagious Liver disease with high Morbidity and Mortality hence should not be left unattended and in light of the study further work is recommended in ensuring the Mother & child health by education the LHWs and the BHU staff to properly sterilize the instruments and where possible use disposable materials. Moreover, the local barbers need to be checked and penalties imposed where noncompliance of rules is observed. The barbers should be included in a net like food vendors and the health authorities must monitor and educate them.

AUTHOR'S CONTRIBUTION

Nasim S: Conceived idea, designed research methodology, Manuscript writing, Data collection and Analysis
Gilani SA: Critical review
Khan MA: Literature search, Manuscript writing

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