Research Report

HBV, HCV, HIV & TB prevalence in injection drug users in major cities of Punjab, Pakistan- A survey-based Research Report

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Abstract:

High prevalence of various infectious diseases including but not limited to HCV, HBV and HIV alongside TB in Pakistani population indicates there must be similarly high prevalence of these, if not higher, amongst (intravenous drug users) IDUs serve as a reservoir for infectious diseases, blood borne as well as others due to injection abuse, poor hygiene and bad quality of life. This continues to be a serious threat in spreading out of these diseases, decreased health quality of the society and increased death rate. This survey study was conducted to check the prevalence of HCV, HBV, HIV and TB in several drug rehabilitation centers in Punjab region of Pakistan. 78 centers were either visited or contacted via phone and 21 out of them cooperated to share their data. An analysis of respondent centers returned useable data revealed that only 7.2% patient were found positive for Hepatitis B. While, 33.23% patients were positive for HCV, 8.74% patients were positive for HIV and 0.87% were positive for TB. What is worrisome is the absence of proper periodic screenings for these as well as other potential infections. Also we found out that upon diagnosis of these diseases mostly rehabilitation centers refuse admittance, which aggravates the problem further as well as leaves those IDUs and their families helpless, who are looking for it. Majority of the respondent centers, doctors, psychologists believed that the patients, partner of the patients and their immediate family members must be offered for infection screenings regularly.

Keywords: IDUs, HCV, HBV, HIV, TB

Introduction:

Recent study on survey of injection drug users (IDUs) in many rehabilitation centers of varied cities of Punjab Pakistan suggested that the prevalence of HCV, HBV, HIV and T.B in injection drug users. HEP-B virus and HIV are blood born viruses. Although HCV is additionally blood born virus but its mode of transmission is different HBV and HIV are transmitted through sexual contact and thru intravenous use of drugs HEP-C is transmitted by direct blood contact of injected person. TB spreads individually through the air. TB is caused by bacteria that infect lungs. HBV approximately 20% of these infections occur among intravenous drug users, mainly through the sharing of contaminated needles and free sexual contact(Seal, Edlin et al. 2000). About 6% to 10% of injection drug users who are infected
with hepatitis B virus become chronic active carriers who may infect others; they'll also develop end stage disease.

The prevalence of HBV 3.215% globally, 2% in Pakistan and its prevalence in intravenous drug users is 3.5% HCV. HCV could also be a significant disease caused by the hepatitis C virus (Control and Prevention 1995). Some people get only a quick term, or acute, infection and are able to clear the virus without treatment. If someone clears the virus, this usually happens within 6 months after infection. Nearly 80% of people who get develop a chronic, or lifelong, infection. Over time, chronic hepatitis C can cause serious health problems including liver damage, liver failure, and even liver cancer. It is well established that injection drug users (IDUs) are in peril of hepatitis C virus (HCV) infection, because of needle and syringe sharing. The prevalence of HCV is 14.4% globally. The prevalence of HCV in Pakistan 63.45% found for all of the Provinces was Punjab 5.46%, Sindh 2.55%, KPK 6.07% and Baluchistan 25.77% and HCV prevalence has been reported in 75%-90% of future injection drug users(Vlahov, Robertson et al. 2010). Intravenous drug users contribute to acceptable worldwide morbidity and mortality linked with human immunodeficiency virus (HIV) infection and AIDS (Acquired Immune Deficiency Syndrome) and other infections due to blood-borne pathogens through the direct sharing of sharp equipment i.e., needles, syringes, and other injections. Prevalence of HIV is 36.95%% globally(Platt, Easterbrook et al. 2016). The prevalence of HIV is 14.7% in Pakistan(Haq, Ullah et al. 2020) and its prevalence in intravenous drug user is 30.5% (Ahmed, Hashmi et al. 2019). T.B folks that use and inject illicit drugs are at high risk of contracting tuberculosis, whether or not they're infected with the human immunodeficiency virus (HIV). Studies conducted before and after the emergence of HIV infection show that, as compared with the general population, folks that use illicit drugs have a far better risk not just of getting tuberculosis infection, but also of developing active disease. The prevalence of TB is 0.125% globally. The prevalence of TB in Pakistan and its prevalence in intravenous drug users isn't estimated.

**Methodology:**

To see the prevalence of HBV, HCV, HIV and TB we visited different rehabilitation centers in several cities of Punjab region in Pakistan. Total 78 Centers were visited and out of which 21 responded and 57 didn't respond and refused to us. Different cities were visited during which Lahore, Multan, Faisalabad, Gujranwala were mainly focused.

We collected the information about the centers from the websites about their locations and their telephone numbers. Mostly the locations that are provided within the internet weren't true i.e. most of the centers keep their information secret. We contacted these Centers by making calls and asked them to permit us to go to their places to satisfy their doctors and convince them to co-operate with us.

We visited the centers whose information is correct on internet but also visited those centers whose information isn't valid on internet, then by asking from person to person we reached our destination. We visited different centers, most of them refused to offer information and didn't co-operate with us in the least. We visited these centers for his or her permission in order that we will return and collect the information which we would have liked.
Fig. 1.1. Number of the Drug Rehabilitation Centers included in the study, city and response wise and mode of data collection. The cities of Punjab in which this study was conducted. While Represents the way of collection of data through which required information was taken from rehabilitation centers and also describes the numbers of respondent and non-respondent centers.

Some centers co-operated with us but mostly refused us. Through telephonic survey we contacted different major cities of Punjab, Pakistan. We mail them the permission letter that was allotted to us in order that some could co-operate with us to give the data which we required. Many centers which we tried to contact refused us by saying that they're not allowed to offer us information on telephone and therefore the centers which we visited, refused by saying that they're also not allowed and a few refused by saying that they don’t admit the patients that are positive for HBV, HCV, HIV and TB.

A questionnaire that's used in the survey is in Appendix 1. Questionnaire has all the information which were required for the study to observe the prevalence. The questionnaire
filled through telephonic survey of various cities and through visiting different centers. Through this we acknowledged that a lot of the centers don’t admit the patients that are positive for HCV, HBV, HIV and TB, after screening.

After getting the info through telephonic and visiting survey by filling the Questionnaire, compiling all the data that is provided by the centers, we need to know the prevalence of HCV, HBV, HIV and TB in Punjab region of Pakistan.

**Results:**

Total 78 rehabilitation centers were visited 21 centers provided us the data that are positive for HBV, HCV, HIV and TB. All centers think that routinely screening for HBV, HCV, HIV and TB is important. They also believe that the partner of the patient and their children also go for routine screening of HBV, HCV, HIV and TB. Mostly centers do not admit the patients that are positive for HBV, HCV, HIV and TB because chances of spreading of these viral diseases are too much. It spread from person to person through blood transfusion, contaminated syringes and free sexual contact.

According to our survey in different cities of Punjab, Pakistan in which Lahore, Gujranwala, Multan, and Faisalabad were mainly focused. According to our survey of Punjab of 2020 the population positive for HBV in Lahore, Gujranwala Multan, and Faisalabad is 3.80%, 0.0%, 6.06%, 20.93% respectively.

![Graph showing prevalence of HBV, HCV, HIV and TB in Punjab](image)

**Fig. 1.2.** Indicates the numbers of patients of HBV, HCV, HIV and TB in IDUs in the selected cities of Punjab, Pakistan. This graph revealed that the prevalence of HBV, HCV, HIV and TB in Lahore, Gujranwala, Faisalabad and Multan. Prevalence of HCV is higher than HBV, HIV & TB.
From the survey it is revealed that 125 (33.23%) patients are positive for HCV out of 369 patients. The percentage for HCV positive in Lahore, Gujranwala, Multan and Faisalabad is 37.13%, 38%, 18.18%, 26.44% respectively.

The population positive for HIV in Punjab Pakistan is 8.74%. The centers do not admit the patients that are positive for HIV in their centers at all. The prevalence of HIV in Lahore, Gujranwala, Multan and Faisalabad is 11.81%, 7.69%, 0.0% and 6.97% respectively.

The prevalence of TB in different regions of Punjab Pakistan i.e. in Lahore, Gujranwala, Multan, and Faisalabad is 0.42%, 7.69%, 0.00%, respectively.

<table>
<thead>
<tr>
<th></th>
<th>HBV</th>
<th>HCV</th>
<th>HIV</th>
<th>TB</th>
<th>TOTAL NO. OF IDUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lahore</td>
<td>3.80%</td>
<td>37.13%</td>
<td>11.81%</td>
<td>0.42%</td>
<td>237</td>
</tr>
<tr>
<td>Gujranwala</td>
<td>0.00%</td>
<td>38.00%</td>
<td>7.69%</td>
<td>7.69%</td>
<td>13</td>
</tr>
<tr>
<td>Faisalabad</td>
<td>20.93%</td>
<td>26.44%</td>
<td>6.97%</td>
<td>0.00%</td>
<td>86</td>
</tr>
<tr>
<td>Multan</td>
<td>6.065%</td>
<td>18.18%</td>
<td>0.00%</td>
<td>3.03%</td>
<td>33</td>
</tr>
<tr>
<td>TOTAL %</td>
<td>7.2%</td>
<td>33.23%</td>
<td>8.74%</td>
<td>0.87%</td>
<td>369</td>
</tr>
</tbody>
</table>

Table 1.3. Percentage of HBV, HCV, HIV and TB in IDUs in Lahore, Gujranwala, Faisalabad and Multan. Prevalence of HCV (38%) is higher in Gujranwala, HBV (20.93%) is higher in Faisalabad, HIV (11.81%) higher in Lahore and TB (7.69%) in Gujranwala in Punjab Pakistan.

Discussion:

All rehabilitation centers conduct counselling and access the testing of all people before admitting them in their centers. The centers which do not do counselling and testing they must need to do this. According to survey of 2019 the total population of the world is 7.65 billion out of which 36.95% population is positive for HIV globally. And 14.7% population is positive for HIV in Pakistan. The population positive for HIV in IDU (injection drug users) is 30.5% (1).

In Lahore in 2017, 100 HIV patients were studied from different rehabilitation centers of Lahore that were used drugs through injections. They screened their blood through immune-chromatography test and enzyme-linked immunosorbent assays. According to that study we came to know that those people who were infected with HIV they were also infected with HBV
and HCV. Out of these 100 people 55% were HCV and 6% were HBV. This result indicated that most of these people were addicted to Avail injection and heroin (Mansha, Imran et al. 2017).

Although Lahore is a big and populated city of Punjab having more than 1 million population but out of which we could access a very small number of patients who were addicted to intravenous drugs. We observed a noticeable number of patients who were infected with HIV due to reuse of infectious syringes and injections.

Injection drug users also infected with HBV or may be along with other infectious disease. Rehabilitation centers in Lahore, Gujranwala, Multan and Faisalabad they conduct counselling and testing routinely. They have doctors in their centers for daily checkup and medication. 7.2% people who inject drugs are infected with HBV and in Faisalabad HBV patients found more as compare to other cities. This is just because of reusing syringes of infected person.

Tuberculosis is also a swear disease found in population. Although it is a bacterial disorder and we mainly focused on viral diseases but in our country its rate is increasing frequently. So we worked on it to check its prevalence. We also focused on Tb among injection drug users, less percentage of TB was noticed in IDUs. But rehabilitation centers also confirmed either the person is infected with Tb or not then they admit. Prevalence of Tb is least (0.87%) in injection drug users according to our study but in Gujranwala (7.69%) it was recorded more than other cities.

**Conclusion:**

We conclude that there is quite significant prevalence of HBV, HCV, HIV and TB in IDUs of main cities (Lahore, Gujranwala, Faisalabad and Multan) of Punjab, Pakistan. This is mainly because of abuse of injection drugs, reusing the same syringes used by infected persons as well as unavailability of proper screening and treatment facilitates. Moreover, most of the rehabilitation centers refuse to admit the patients who screen positive for HBC, HCV, HIV or Tb. We propose that there must be more state or NGOs sponsored rehabilitation centers which admit those who need help with both, drug addictions as well as disease infections under the supervision of best possible doctors and psychiatrists. IDUs make a notable part of any society and they should not be left helpless, rather be taken care of and helped to be integrated back into the society as its healthy, respected and productive members.

**Appendix**

1) **What sort of treatment service are you?**

i. Governmental  
ii. Semi-Governmental  
iii. Private-Run  
iv. NGO-Run (Locally funded)  
v. NGO-Run (Internationally Funded)  
vi. Other (please specify)-----------------------------
2) What is your profession?
   i. Doctor [ ], please specify
   ii. Nurse [ ], Grade____
   iii. Drug worker [ ]
   iv. Social worker [ ]
   v. Other [ ], please describe________________

3) Do you have any medical sessions on-site at your service?
   Yes [ ]; No [ ]; Don’t know [ ]

4) How many drug-using clients does your center see in a typical day? [ ] enter number

5) Total number of inhabitants-----------------------------------------------

**Hepatitis B**

1) What number of your centre clients do you estimate are positive for hepatitis B? [ ]

Testing Practice

2) Does your centre provide testing for hepatitis B –either:
   Not at all [ ], offered routinely [ ], on request [ ] please tick one
   If provided, is this – On-site [ ]; by referral [ ] if so, to where? Please describe below

3) Do you think clients should be routinely offered screening for hepatitis B?
   Yes [ ]; No [ ]; Don’t know [ ]

4) Do you think partners of clients should be routinely offered screening for hepatitis B?
   Yes [ ]; No [ ]; Don’t know [ ]

5) Is any pre-test counselling provided?
   Yes [ ]; No [ ]; Don’t know [ ]

Vaccination Practice

6) Does your centre provide hepatitis B vaccination – either:
   Not at all [ ], offered routinely [ ], on request [ ] please tick one
   If provided, is this
      a) On site [ ]; by referral [ ] if so, to where?
Do you?
i) Vaccinate without testing for hepatitis B [ ]

ii) Vaccinate at the same time as testing for hepatitis B [ ]

iii) Vaccinate after results of hepatitis B tests have been received [ ] please tick as many as appropriate

If on-site, what schedule for administration do you use?

i) 0, 1 and 6 months [ ]

ii) Other [ ] please describe

7) Do you think partners of clients should be routinely offered vaccination?

Yes [ ]; No [ ]; Don’t know [ ]

8) Currently what number of your centre clients have been vaccinated for hepatitis B?

[ ] enter number here

9) Do you think hepatitis B vaccination is safe?

Yes [ ]; No [ ]; Don’t know [ ]

10) How many clients has your service vaccinated/if any for hepatitis B in the last 3 months?

a) none [ ]

b) 1–5 [ ]

c) 6–10 [ ]

d) 11–20 [ ]

e) 120 [ ]

11) Either the Doctor is provided by centre OR its a patient arrangement?

Hepatitis C

1) What number of your centre clients do you estimate are positive for hepatitis C? [ ]
Testing Practice

2) Does your centre provide testing for hepatitis C –either:
Not at all [ ], offered routinely [ ], on request [ ] please tick one
If provided, is this –On-site [ ]; by referral [ ] if so, to where? Please describe below

3) Do you think clients should be routinely offered screening for hepatitis C?
Yes [ ]; No [ ]; Don’t know [ ]

4) Do you think partners of clients should be routinely offered screening for hepatitis C?
Yes [ ]; No [ ]; Don’t know [ ]

5) Is any pretest counselling provided?
Yes [ ]; No [ ]; Don’t know [ ]

6) Either the Doctor is provided by centre OR it’s a patient arrangement?

HIV

1) What Number of your centre clients do you estimate are positive for HIV? [   ]

Testing Practice

2) Does your centre provide testing for HIV –either:
Not at all [ ], offered routinely [ ], on request [ ] please tick one
If provided, is this –
On-site [ ]; by referral [ ] if so, to where? Please describe below

3) Do you think clients should be routinely offered screening for HIV?
Yes [ ]; No [ ]; Don’t know [ ]

4) Do you think partners of clients should be routinely offered screening HIV?
Yes [ ]; No [ ]; Don’t know [ ]

5) Is any pretest counselling provided?
Yes [ ]; No [ ]; Don’t know [ ]

6) Either the Doctor is provided by centre OR it’s a patient arrangement?

TB
1) What percentage of your centre clients do you estimate are positive for TB? [%]

Testing Practice

2) Does your centre provide testing for TB— either:
   Not at all [ ], offered routinely [ ], on request [ ] please tick one
   If provided, is this—
   On-site [ ]; by referral [ ] if so, to where? Please describe below

3) Do you think clients should be routinely offered screening for TB?
   Yes [ ]; No [ ]; Don’t know [ ]

4) Do you think partners of clients should be routinely offered screening for TB?
   Yes [ ]; No [ ]; Don’t know [ ]

5) Is any pretest counselling provided?
   Yes [ ]; No [ ]; Don’t know [ ]

6) Either the Doctor is provided by centre OR it’s a patient arrangement?

References


