

# PREVALENCE OF HEPATITIS B & C IN PATIENTS OF DRUG DEPENDENCE IN LAHORE, PAKISTAN

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## ABSTRACT

**Objective:** To analyze the prevalence of Hepatitis B and Hepatitis C among drug users, their knowledge about Hepatitis, its prevention & transmission and to estimate the size of IDU's among other drug addicts.

**Design:** Cross sectional study.

**Place & duration of study:** Study was done with a group of 520 randomly selected patients of drug dependence during a period of 6 months in Lahore, Pakistan.

**Subjects and Methods:** Drug dependants of all age group and sex were included in the study. A questionnaire was designed including demographics, History of patient, History of substance abuse, Knowledge of hepatitis and lab findings. Data was collected & analyzed.

**Results:** 40% patients were having knowledge of hepatitis. More than 54% of patients were multiple substance abusers. The most common route of administration was injection drug abuse 29%, inhalation 23%, inhalation and oral 13%, oral only 7% and from all routes 28%. 11% of the patients were HCV positive. Among the positive all were injection drug users. About 48% patients were HbsAg.

**Conclusion:** The prevalence of HBV infection did not significantly differ between IDUs and the non-IDUs, the prevalence of HCV infection was significantly higher among IDUs. Active preventive program focusing on educational campaigns against substance abuse should be undertaken.

**KEY WORDS:** Drug Dependence, Injection Drug Users (IDU), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV)

## INTRODUCTION

Drug abuse is basically compulsive, obsessive, irrational, excessive, & self damaging use of habit forming drugs or substances, leading to addiction or drug dependence, serious physiological injury (such as damage to kidneys, liver heart) and/or psychological harm (such as hallucinations or memory loss), or death<sup>1</sup>.

Pakistan is among the worst afflicted nations. The National Survey on Drug Abuse in Pakistan in 1993 estimated 2.7 million addicts. Heroin was used by 1.52 million<sup>2</sup>. Before the Afghan war the fraction of inhalation addicts was much higher than today and the inhalation material was a type of heroin called "brown sugar"<sup>3</sup>. Personal interactions with field workers, researchers and donors propose that there is a mounting swing towards injection drug use (IDU) among addicts. Potential reasons

for this preference for injection could be the change in heroin quality<sup>4</sup>.

Viral hepatitis is a systemic virus infection characterized by hepatic cell necrosis and inflammation. Different types of viral hepatitis are A, B, C, D, and E viruses<sup>5</sup>. HBV and HCV are responsible for severe liver disease, including hepatocellular carcinoma and cirrhosis-related end-stage liver disease. The World Health Organization (WHO) estimates that about 350 million people suffer from chronic HBV infection and 170 million people with chronic HCV infection worldwide<sup>6</sup>. Hepatitis B is estimated to result in 563 000 deaths and hepatitis C in 366 000 deaths worldwide annually<sup>7</sup>. Pakistan has highest rates of hepatitis in world, as having hepatitis B virus (HBV) infection about 2.5% and hepatitis C virus (HCV) infection about 4.8%<sup>8</sup>. Increase in number of positive HCV patients is alarming, including Pakistan that has the second highest prevalence rate of hepatitis C ranging from 4.5% to 8%<sup>9</sup>. About 350 million remain infected chronically and become carriers of the virus<sup>10</sup>. Every year about 1 million people die each year from chronic active hepatitis, cirrhosis or primary liver cancer<sup>11</sup>. Hepatitis B virus (HBV) is particularly important among the diseases transmitted by the parenteral route<sup>12</sup>. Hepatitis C virus (HCV) is considered as the most vital cause of post-transfusion hepatitis. Chronic hepatitis C is one of the most common causes of cirrhosis and HCC<sup>13</sup>. The mean frequency of HCV infection in the world is about 3%<sup>14</sup>. The virus interferes with the functions of the liver while replicating in hepatocytes. As a consequence

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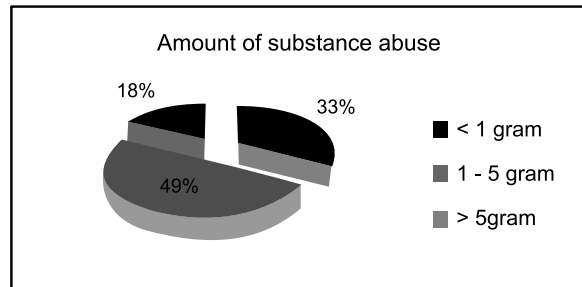
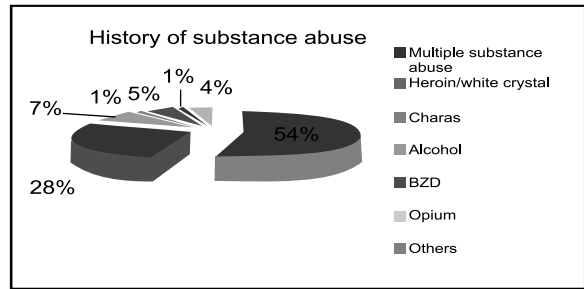
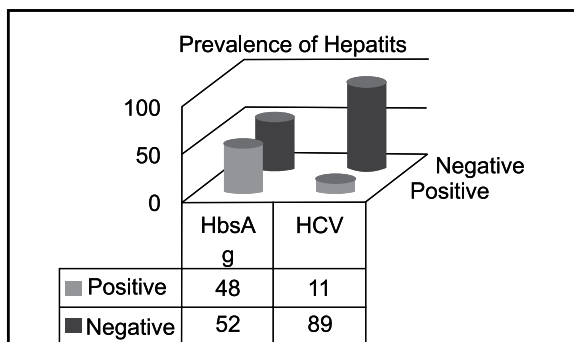
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of pathological damage, the liver becomes inflamed<sup>15</sup>. According to year 2000 National Assessment Study of Drug Use in Pakistan in association with the United Nation Office of Drug Control and Crime Prevention (UNDCO), Pakistan had about 500,000 heroin addicts, of whom 15% are regular IDU's & 30% are occasional IDU's. In a study conducted in 2003, it is showed that HCV prevalence of about 93% in IDU's of Lahore & 75% among Quetta.

It is logical that micro-environmental and macro-environmental physical, social, economical, and political factors are vital in influential risk behaviors for HBV and HCV among IDUs. System correlates of drug tools sharing are multi-factorial and comprise of structural factors like system size, density, position, and turnover rates, compositional factors like system component characters and role and quality of relationships with members, and behavioral factors like injecting norms, patterns of drug use, and severity of drug dependency<sup>16</sup>. Primary aims of this cross sectional study were to evaluate the prevalence of Hepatitis B and Hepatitis C among patients of drug dependency and knowledge about Hepatitis, its prevention & transmission among patients. Secondary aim was to estimate the mode, amount and duration of common substance mostly used by drug addicts and to estimate the size of Injection Drug Users.

## SUBJECTS AND METHODS

Cross sectional, Retrospective as a well as prospective study design was used at different phases of this study in different hospitals and drug addiction centers of Lahore. It was study with random sampling. Patients of all age group and sex who were drug dependent were included in the study and patients of hepatitis who are not drug abusers were excluded from the study., although male and female of all age group who were included in the study but luckily we did not find any female patient in any zone. So all subjects were male and there was no female. 520 Patients were randomly selected during a period of 120 Days. A data collection form was concisely designed covering the demographics, History of patient, History of substance abuse, Knowledge of hepatitis and Details of lab findings like HBsAg, Anti HCV, LFT's, RFT's and other hematological findings were done. Data was collected and then the results were summarized, tabulated and analyzed using descriptive statistics and results were



Mode of administration for substance abuse			
No.	Mode	Percentage	N=
I.	Inhalation	23%	120
II.	Injection	29%	151
III.	Oral	7%	36
IV.	Inhalation + Oral	13%	67
V.	All modes	28%	146

shown in various forms of graphs.

## RESULTS

Among all patients observed about 89% patients were HCV negative while almost 11% patients were HCV positive, about 52% patients were HBsAg negative while almost 48% were hepatitis B positive majority of them are injection Drug Users. From whole population observed only 40% patients were having knowledge of hepatitis while major population i.e. almost 60% was unaware of the disease. Among the majority of the 40% with knowledge of hepatitis, they don't know about the preventive measures for its spread. Among all patients observed about 61% were abusing from more than 5 years, about 27% from 1-5 years & about 12% patients were abusing from less than 1 year. A major portion of observed population i.e. about 49% were taking 1-5 grams, 33% were taking less than 1 gram and about 18% patients were taking >5 grams of their respective abused substance.

## DISCUSSION

Drug dependence is actually a condition of periodic or chronic intoxication which is detrimental to individual and also to the society along with irresistible desire called as craving for continues drug taking and obtaining it by any means either ethical or unethical. Some commit suicide, some steal and others use drugs. Pakistan is one of

the primary transit countries for drugs from Afghanistan which is the largest dealer of illicit drugs; Different modes of administering the substance (oral to ingest, inhalational or intravenous) leads to various problems for the drug dependence especially the intravenous route causes a significant and drastic raise in the number of patient with hepatitis as it is a viral disease and spread by the contaminated needles and accessories shared by infected person with normal one. The inhalation material was called "brown sugar" which was a sort of heroin however, since 2001 "brown sugar" is not available easily and the most common material largely available and used by addicts is called "white crystal" and it can only be injected and has more euphoric effects, it produces strong narcosis. Different factors including illiteracy, poverty, socio-economic deprivation, acquired society, family history and others which affect different people in different ways. These all factors also play spectacular role in promoting substance abuse; thus mounting number of patients with HBV and HCV in Pakistan is observed specially in the last decade.

From the data collected among all patients observed, the dominating age group i.e. 58% (270) were >25 years, about 48% (250) were from 18-25 years & no one was of <18 years of age. About 69% (359) patients were Independent, while 31% (161) were dependent on the family for their daily expenses as they had no source of income and those who are independent about 57% (296) patients were doing manual jobs, about 11% (57) patients were doing professional jobs, 13% (68) were having sedentary occupational sources and almost 19% (99) were jobless at the time of study conducted. Low literacy rates were observed, about 23% (120) were completely illiterate, about 33% (172) have studied up to middle, about 31% (161) have level of education up to Matriculation & almost 13% (67) patients were educated up to intermediate & more. Out of all subjects interviewed about 92% (478) were non judicial, while only 8% (42) patients had from judicial proceedings in their lifetime because of the substance abuse. 59% (307) of the patients were unmarried while 41% (213) were married.

From the population studied only 40% (208) patients were having knowledge of hepatitis while major population i.e. almost 60% (312) were unaware of the disease symptoms and its outcomes, even those who have knowledge just know its symptoms but were unaware of its spread and harms. So, among all patients, only 5% (26) were those who have been vaccinated for prophylaxis of hepatitis while most of patients i.e. 95% (494) have not been vaccinated and don't have any idea about immunization. Among all patients, about 39% (205) had tattoos on their body, which is one of the prime causes for the spread of blood borne diseases like hepatitis, while about 61% (315) patients were having no tattoos at all. About 15% (75) patients had history of sharing common shaving equipments, with their family or friends, while 85% (444) patients had no such history as they have knowledge to not to share used blades etc. Out of all subjects observed about 43.50% (226) patients had the history of injury by contaminated needles, while about 56.50% (294) were safe from needle injury. 33% (172) patients were having carriers of hepatitis in their close vicinity like in family,

about 21% (109) patients had no hepatitis carriers living with them, while 46% (239) patients were completely unaware of the presence of any carrier in their vicinity that is family, relatives, friends and neighborhood.

From all the patients interviewed 61% (317) were abusing different substances from more than 5 years, 27% (140) from 1-5 years & about 12% (63) patients were abusing from less than 1 year. More than 43% (225) patients were admitted in hospital for the very 1st time with the purpose of their proper assessment and treatment, about 14.8% (77) patients had their 2nd admission and about 25.7% (134) had their 3rd visit to the hospital while about 16.3% (84) patients had their 4th visit in any hospital to get rid from menace of addiction. From the subjects studied 51% (265) had history of continuous intake of drug while about 49% (255) had intermittent history of substance abuse. Among all patients about more than 94% (491) patients were daily abusers, only about 5.5% (29) patients were abusing on alternate basis as when they have access or sources they abuse otherwise not. Among all patients more than 54% (281) patients were multiple substance abusers that is they have consumed more than 2 drugs, about 28% (146) patients had history of abusing heroin/white crystal, 7% (36) with only charas, 5% (26) with different benzodiazepines, 4% (21) with other drugs like avil, cough syrups & 1% (5) were abusing only alcohol & opium respectively To estimate the prevalence of hepatitis in patients among all substance dependant population about 11% (57) patients were HCV positive about 48% (250) patients were HBsAg positive If to come to their lab findings about 85% (442) patients had normal values of LFTs (Liver Function Tests), while about 15% (78) patients were having altered LFT's. About 96% (499) patients had normal values of Blood Pressure, while about 4% (21) had fluctuations in their BP, and similarly about 97% (504) population was having normal values of other vitals like temperature & pulse, while only 3% (16) had altered vital signs.

Among the IDUs, the prevalence of both HBV and HCV infections was associated with sharing of needles and longer duration of injection drugs abused. There was no association between the seroprevalence of HBV and HCV infections and age, sex and financial status. Active preventive program focusing on educational campaigns among the youths against substance abuse should be undertaken, thus to lower the impact of the substance abuse in Pakistan, good knowledge and a thorough understanding of evolving methods being used by smugglers for drug trafficking, is essential for successful interdiction and for HCV transmission to be reduced, intensive counseling and health education would be of paramount importance; an appropriate means of preventing HCV transmission may be necessary.

## CONCLUSION

Majority of the population studied don't have knowledge of hepatitis, its transmission, spread, symptoms, immunization, and treatment. Different substances are being abused; most common are white crystal, heroin, charas, bhang, hashish, alcohol, and drugs like benzodiazepines.

In the recent past there has been a significant shift from traditional modes of drug use (inhaling, smoking) to injecting drugs in our Region. Hepatitis is becoming more popular in our region just because of sharing injecting equipment and injury by contaminated needle. The prevalence of HBV infection did not significantly differ between the IDUs and the non-IDUs, the prevalence of HCV infection was significantly higher among the IDUs. An appropriate means of preventing HCV transmission may be necessary; this target can only be achieved by the active participation of youth along with government support to launch educational and informational campaigns to get rid of this menace. The solution to reduce demand for drugs is therefore not policing and law enforcement, but an effort to genuinely help people choose better options and not need drugs to cope with reality.

## RECOMMENDATIONS

The physician must treat patient with empathy rather sympathy. Hospitals should not be discharged before detoxification and psychotherapy. At least once each month, the patients should have the opportunity to participate in a session of dynamic-oriented psychotherapy to avoid relapse. Government should promote literacy, properly check and control drug trafficking. Law & order should be properly implemented to strictly control sale of all those substances which have potential for abuse and educate people by workshops and public awareness campaigns about harms and deleterious effects of drugs and their use. A list OTC must be generated to avoid drug abuse. More rehabilitation centers should be made so that patient should be treated at a minimum cost. Government should introduce abstinence program to gain maximum results for the therapy provided to patients.

Pharmacist should not confine himself to drug distribution only; rather he must be active & visible. He should double check the prescription and rectifies the errors and should properly check the sale of schedule G drugs. Prescription must be counter checked for interacting drugs. Proper counseling of patient must be done to avoid relapse.

## LIMITATIONS

Prevalence studies are carried out in communities, Study in institutions are described in frequencies. But in this study we have considered hospitals & institutions as communities because even though we can have patients of drug dependency on road side in but Basically this study is about prevalence of Hepatitis in Lahore community, but as Hepatitis testing (HbsAg & HCV) requires technical approach and sophisticated method so cannot be done like an interview study, we need lab findings which can only be available from some hospital set up. so we have generalized our sampling institution as a community for this study.

Why HIV testing is not carried out because study was done in private drug addiction centers some of which do not has facility for HIV testing, so because of lack of facilities, the results may fluctuate if we consider HIV with HBV & HCV test. So only prevalence of hepatitis were observed. & it must not to be confused with HIV.

## ACKNOWLEDGEMENT

We wish to express our heartiest gratitude to Dr. Hafeez Ikram, Dr. Farooq Bashir Butt and Dr. Tayyab for their skilled advice, constant encouragement and valuable supervision throughout the course of our training.

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