PREVALENCE OF VIRAL INFECTIONS AMONG THE DRUG ADDICTS IN LIBYA

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ABSTRACT:
Drug users are at high risk for direct exposure to a variety of blood-borne bacterial and viral infections. Accurate up-to-date data on the extent of drug use and the prevalence of blood-borne viruses among the illegal drug users are a necessary pre-requisite for health and social service planning and policy development. Study aims to estimate the prevalence of the viral infections among drug addicting patients and also to examine the interrelationship between the presence of these blood-borne viral infections and socio-demographic characteristics among the drug users.
Blood samples were collected from 479 respondents and all were analysed for the seropositivity for HBV, HCV and HIV with ELISA kit (Dialab GMBH, Austria).
The results of the current study revealed that HBV, HCV, and HIV were high among the studied illegal drug users and the age and education level of the cases have a clear positive relation with seropositivity to the three blood borne viruses. The results also proved that seropositivity to blood borne viral infection is directly proportional to the frequency of injection and history of imprisonment. More research is recommended in Libya to estimates of the number of illegal drug users and the rates of seroprevalence among them. A public health intervention must be encouraged to overcome this health problem and Hepatitis B vaccination of all illegal drug users should be mandatory.

KEY WORDS: Viral infections, HIV, HBV, HCV, Drug addicts, Libya.
INTRODUCTION:

Injection drug users are at high risk for infection with several blood-borne pathogens, including hepatitis B virus (HBV)1 hepatitis C virus (HCV)2 and human immunodeficiency virus (HIV)3. Systematic diagnostic studies indicate that around 80 % of patients with a drug dependency diagnosis also have co-morbid psychiatric disorders. Studies have shown that youths who smoke crack cocaine are up to three times more likely to be infected with HIV than are youths who do not. Non-injecting drug users who trade sex for drugs or who engage in unprotected sex while under the influence of drugs increase their risk of infection. Hepatitis B (HBV) and hepatitis C (HCV) are viral diseases that destroy liver cells and can lead to cirrhosis and liver cancer. People can become infected with HBV through sexual intercourse with an infected person or through exposure to an infected person's blood, as may happen when IDUs share needles. Blood transfusion and needle sharing are the most common routes of infection with HCV. Hepatitis B (HBV) and hepatitis C (HCV) are viral diseases that destroy liver cells and can lead to cirrhosis and liver cancer. People can become infected with HBV through sexual intercourse with an infected person or through exposure to an infected person's blood, as may happen when IDUs share needles. Blood transfusion and needle sharing are the most common routes of infection with HCV.

National Institute on Drug Abuse (1999)4 study found overall HCV and HBV prevalence of 76.9 percent and 65.7 percent, respectively, in a group who had been injecting drugs for 6 years or less. Persons who use drugs illicitly are at increased risk for acquiring and transmitting infectious diseases via blood borne exposure (for those who inject), and they are at increased risk for sexual exposure to HIV and STDs5. The severe pathological consequences of persistent HBV infections include the development of chronic hepatic insufficiency, cirrhosis, and hepatocellular carcinoma. In addition, HBV carriers can transmit the disease for many years6. HBV is treated by Interferon –a7 and Lamivudin8.

Chak et al (2011)9 study identified injection drug use as the risk factor for 84% of individuals diagnosed with acute HCV. Approximately 20 to 30% of persons who inject drugs are infected with HCV within the first 2 years of starting to inject drugs and 75 to 90% of persons who inject drugs are anti-HCV positive. Combination therapy with interferon and ribavirin for 24 or 48 weeks should be the treatment of choice for patients who relapse after interferon treatment10.

Injection of drugs using needles contaminated with HIV is playing a major role in the spread of AIDS among young people, especially young men. By the end of 1999, injecting drug use was reported in 136 countries, and 114 of them had recorded cases of HIV infection via intravenous drug injection11. Injection drug use is a significant contributor to HIV epidemics in Eastern Europe and Central Asia, Latin America, and South and Southeast Asia where 67 percent, 19 percent, and 22 percent, respectively, of all HIV cases are related to injection drug use. In many locations, the epidemic spread of HIV has been dramatic; there are repeated instances of annual increases of 15 percent or more among injectors and consecutive years of such increases12. HIV is mainly transmitted by contacting with body fluids13, drug abuse and vertical transmission from mother to baby14.

This study aims to estimate the prevalence of the viral infections among drug addicting patients and also to examine the interrelationship between the presence of these blood-borne viral infections and socio-demographic characteristics among the drug users.

MATERIALS AND METHODS:

Study was conducted at Central drug addiction treatment centre, Tripoli, Libya. The study-subjects include those drug addicts and are drug users through intravenous/intramuscular routes.

Data regarding socio-demographic characteristics, types of drugs use with duration and routes of administration, and sexual practices are collect by interviewing them. The study samples of 479 respondents were randomly selected.

5 ml of blood samples were collected, prepared sera using centrifuge and analysed using commercially available ELISA Kits. HBV surface antigen (HBs Ag) and antibody (anti-HBs), HCV antibody and HIV antibody were analysed with ELISA from DIALAB, GmbH, Austria.

RESULTS AND DISCUSSION:

One of the key areas for control of blood-borne infections is minimizing the transmission of disease through non-transfusion routes, primarily injecting drug use. Of the 479 respondents who answered the questions, all were identified as male (100%) and 88.3% are from Libya. More respondents (40.5%) for this study (Table 1) is belong to the age group

between 26 and 34 years young and the highest level of education (47.1%) is high school. 41.8% of cases from Mitiga Tripoli jail and followed by Abusleem jail, Tripoli with 31.2%. Many cases reported that they have an experience of illicit injection the drug for 1 – 2 years duration. Most (41.8%) used the drug in their own houses. De matos et al., (2013)17 also found that all HBV positive cases were male and aged from 19-44 years in Brazil.

Table1: Demographic Survey of Cases (479):

S. No.	Characters	%	Total %
1	Age (Years):		
	≤18 years	6.5	--
	19-25	25.9	--
	26-34	40.5	--
	35- 44	20.5	--
	> 45	6.6	100
2	Education:		
	Uneducated	13.5	--
	Primary school	32.4	--
	High school	47.1	--
	Graduated	7.0	100
3	Country of Birth:		
	Libya	88.3	--
	Other	11.7	100
4	Place of Cases:		
	Mitiga, Tripoli	41.8	--
	Janduba, Garyan	27.0	--
	Abusleem, Tripoli	31.2	100
5.	Marrital status:		
	Married	63.0	--
	Single	37.0	100
6.	Sexual Behaviour:		
	Heterosexual	100	--
	Homosexual	00	--
	Bisexual	00	100

7	Duration of an Injection:		
	Less than one year	23.4	--
	1-2 years	44.9	--
	More than two years	31.7	100
8	Frequency of injection:		
	Once a weak	16.5	--
	Two times a weak	50.7	--
	More than two times a weak	32.8	100
9	Place of injection		
	Their own homes	41.8	--
	Friend's home	32.7	--
	Dealer's house	9.0	--
	Other places	16.5	100

Table 2 represents the prevalence of HBV cases and revealed that around 2.9% of the cases were positive with HBV infection during the study. They were habituated of injecting the illicit drugs for more than two times daily.

Table 2: Prevalence of HBV cases:

S. No.	Characters	Positive		Negative		Total %	
		No.	%	No.	%	No.	%
1	Age (Years):						
	≤ 18	0.0	0.0	31.0	6.6	31.0	--
	19-25	0.0	0.0	124.0	25.9	124.0	--
	26-34	9.0	1.8	185.0	38.7	194.0	--
	35- 44	14.0	2.9	84.0	17.5	98.0	--
	> 45	4.0	0.8	28.0	5.8	32.0	100
2	Frequency of injection						
	Once a weak	0.0	0.0	0.0	0.0	0.0	--
	Two times a weak	0.0	0.0	0.0	0.0	0.0	--
	More than two times a weak	27.0	5.6	452.0	94.4	479	100
3	Imprisonment History:						
	Never before in Prison	7.0	1.5	160	33.4	167	--

	Ever before in prison	20.0	4.2	292	60.9	312	100

Hepatitis C virus is one of the dangerous viruses without any proper vaccine. The results indicated that the highest HCV seropositive cases (5.4%) were in age group between 35 and 44 years young. Drug users were using more than two times a week were 7.3% people (Table 3). HCV-specific antibody levels among national samples of IDUs in 2009–2010 varied from 14% to 73% (among 12 countries that report national prevalence data). In seven of the 12 countries with national data, the prevalence was over 40%. During 2005 to 2010, a declining prevalence of HCV infection at either national or subnational level in IDUs was reported from six countries and an increase was seen in five (Austria, Bulgaria, Cyprus, Greece and Romania); Italy reported a decline at national level during 2005 to 200916. But the latest study reveals that the prevalence of HCV infection is high among drug addicts in Italy18.

Regarding HIV positive test were observed more (2.7%) in the age group of 35-44 years young and above 45 years, cases were very less when compared with other age groups (Table 4). Around 4.18% of the people were experienced more than two times a week for using drugs by injections. All the positive cases were observed that they were not having HIV infection before this study.

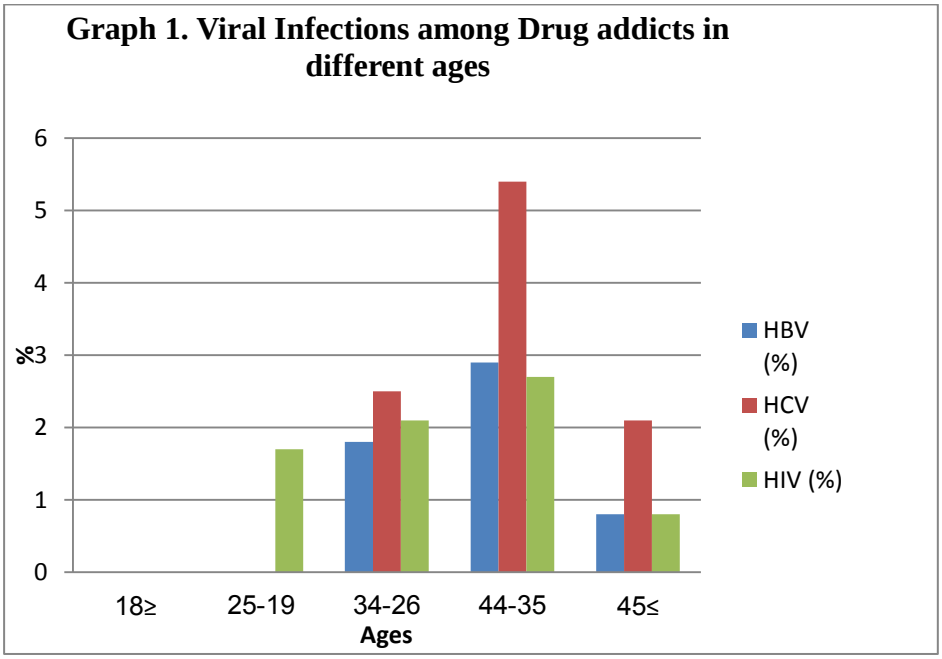
Table 3: Prevalence of HCV:

S.No.	Characters	Positive		Negative		Total %	
		No.	%	No.	%	No.	%
1	Age (Years):						
	≤ 18	0.0	0.0	31.0	6.5	31.0	--
	19-25	4.0	0.8	120.0	25.1	124.0	--
	26-34	12.0	2.5	182.0	38.0	194.0	--
	35- 44	26.0	5.4	72.0	15.0	98.0	--
	> 45	10.0	2.1	22.0	4.6	32.0	100
2	Frequency of injection						
	Once a weak	2.0	0.4	00	00	2.0	--
	Two times a weak	15.0	3.1	00	00	15.0	--
	More than two times a weak	35.0	7.3	427	89.2	462	100
3	Imprisonment History:						

	Never before in Prison	17.0	3.5	150	31.3	167	--
	Ever before in prison	35.0	7.4	277	57.8	312	100

Table 4: Prevalence of HIV:

S.No.	Characters	Positive		Negative		Total %	
		No.	%	No.	%	No.	%
1	Age (Years):						
	≤ 18	0.0	0.0	31.0	6.5	31.0	--
	19-25	8.0	1.7	116.0	24.2	124.0	--
	26-34	10.0	2.1	184.0	38.4	194.0	--
	35- 44	13.0	2.7	85.0	17.7	98.0	--
	> 45	4.0	0.8	28.0	5.9	32.0	100
2	Frequency of injection						
	Once a weak	5.0	1.04	00	00	5.0	--
	Two times a weak	10.0	2.08	00	00	10.0	--
	More than two times a weak	20.0	4.18	444	92.7	464	100
3	Imprisonment History:						
	Never before in Prison	4.0	0.84	163	34.03	167	--
	Ever before in prison	31.0	6.47	281	58.66	312	100
4	Status at last HIV test						
	Not have HIV before	35.0	7.31	444	92.69	479	100
	Don't know/not sure	0.0	0.0	0.0	0.0	0.0	0.0
	Have HIV before	0.0	0.0	0.0	0.0	0.0	0.0



Almost in all the studied data, viral positive cases were noticed in the age group of 35-44 years (Graph1). During the frequency of injection study, HCV infection is more than other two viruses when inject the drug illegally two times a week. However, high prevalence of HBV may exist in somewhat elder populations traditionally at higher risk for infection, particularly injection drug users. Meanwhile, Iran has one of the highest per capital numbers of opioid users in the world, with a substantial and potentially growing proportion of injection drug users 15. High levels of prevalent infections of HIV and HCV in IDUs, as well as continued high levels of HCV spread, constitute an ongoing threat through blood-borne, sexual and healthcare-associated transmission16. In general, the prevalence of HBV and HCV among the normal population of Libya are about 2.2% and 1.2% respectively19. But in Iran, The prevalence rates for hepatitis B, hepatitis C and HIV infection were 10.0%, 6.0% and 23.0%, respectively20.

CONCLUSION:

- This study showed that HBV, HCV, and HIV were high among the studied illegal drug users and the results proved that infection with HIV is less frequent than HCV. The results of the present study proved that

seropositivity to blood borne viral infection is directly proportional to the frequency of injection. History of imprisonment play an important role in increased seropositivity to blood borne viral infection and those ever having been in prison usually more likely exposed to infection.

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RECOMMENDATIONS:

The following points are recommended to reduce or prevent the drug addicts.

- Giving an information on prevention and transmission of infectious diseases and injection practices,
- assessment of personal risk,
- counselling to address emotional or practical issues in practicing drug abuse,
- HBV, HCV and HIV testing and treatment
- STD screening and treatment,
- referral to substance abuse treatment and social services (e.g., housing),
- psychosocial support,
- referrals to relevant mental health and
- training in change the drug abuse and diverting the mind in other useful activities.

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