Heroin Chasers Versus Injection Heroin Users: A Study from Kashmir

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ABSTRACT

Introduction: Opioids are the most harmful drugs in terms of their ill effects on human health. In India, heroin is the most commonly used opioid and is being used via different routes including intravenous and 'chasing the dragon' mode. Chasing is one of the most widely practiced methods in world including India. Research regarding comparison of the clinical features and outcome of these groups is scant.

Material and Methods: Retrospective chart review of patients diagnosed with primary opioid dependence was made. Fifty heroin chasers attending de-addiction clinic of our institute consecutively were compared with fifty injection heroin users (IHUs) regarding socio demographic, clinical characteristics and outcomes.

Results: Most of the treatment seekers for heroin dependence were in the age group of 20-34 years (74% IHU and 76% chasers, P value of 0.78). Mean scores on opioid dependence severity were higher (42.45 + 9.23) in injection users as compared to chasers (37.56 + 8.28, P < 0.01). There was no significant difference between two groups in overall quality of life (17.32 +3.33 for IHUs vs 19 + 4.32 for chasers, P =0.44). As compared to chasers, IHUs had 1.79 odds of receiving Buprenorphine (Confidence Interval:1.1-4.1) and this was statistically significant (P < 0.01). IHUs had lesser odds of drop out on first follow up as compared to chasers (6% vs 34%, OR: 0.12, CI : 0.03-0.45 , P < 0.01).

Conclusion: Our findings indicate that there was no difference in most of socio demographic variables between IHUs and heroin chasers. IHUS were having higher severity of opioid dependence and had higher odds of receiving Buprenorphine as withdrawal management. They had higher retention rates as compared to chasers. There was no difference in overall quality of life scores between two groups.

Keywords: Heroin Chasers, Injection Heroin Users

INTRODUCTION

Substance use is turning out to be one of the major public health problems of modern society. Opioids continue to be most harmful drugs in terms of their health consequences. As per recent World Drug Report, opium production remains at record levels with increasing seizures by law enforcement agencies throughout the world.[1] In India, as per recent nationwide study, current prevalence of any opioid use was 2.06%. Heroin is also the most commonly used opioid in India and there are about 8.5 lac Indians who Inject Drugs, majority being opioid users.[2] Geographical location of Kashmir valley makes it an ideal transit for different substances. In Kashmir, use of heroin was first reported in the 1980s.[3] From last couples of years, there have been increasing media reports of seizure of opioids from Kashmir valley and large numbers of Injection Heroin Users (IHUs) seeking treatment at service providers.[4,5] Route of administration has important implications like rate of heroin delivery to brain as well as risk of infections like HCV & HIV.[6] In addition to injection route, heroin can also be used via intranasal inhalation (snort or sniff) and vapour inhalation (also known as chasing). Chasing involves placing heroin over a foil (silver, tin) followed by inhaling (chasing) vapours through a small tube when flamed underneath. While it is believed that Non IVDUs (chasers) transit to IVDUs, some authors report that chasing may be robust and stable pattern of behaviour and patients may continue as chasers for longer periods of time.[7]

Few studies reported that heroin users are a homogenous group with no differences in severity of dependence, however IHUs have been reported to have higher treatment utilization as compared to non-IHUs.[8] Differences between Intra Venous Heroin Users (IHUs) and Non-IHUs with regard to clinical profile, socio occupational dysfunction and outcome results have not been studied adequately in India. While there have been few studies from Kashmir on pattern of substance use including opioids, none of those studies have compared the characteristics of non-injection heroin users with injection heroin users. Keeping these facts in consideration, we compared the socio demographic and clinical outcomes of IHUs with non IHUs who sought treatment from our centre.

MATERIAL AND METHODS

This was a retrospective chart review in which subjects were recruited from a de-addiction centre in Srinagar, Kashmir. This centre is run by psychiatry department of a tertiary care hospital in North India. All the subjects having minimum age of fifteen years and diagnosed with opioid dependence disorder as per International Classification of Diseases-10

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(ICD-10) were included.[9] For this study, treatment records of patients who had reported between June 2018 to August 2019 were retrieved and inspected retrospectively. The retrieved information included socio-demographic profile and clinical profile.

Following scales/ definitions were utilised:

Severity of the Opioid Dependence Questionnaire (SODQ): It is a 9-item instrument which measures the severity of opiate dependence.[10]

World Health Organization Quality Of Life-BREF (WHOQOL-BREF): It is a 26-item version scale used to assess quality of life (QoL). It consists of 4 domains; Physical Health, Psychological, Social Relationships, and Environment and each item is rated on a five-point scale (1-5). The fifth choice indicates the best status and the first choice indicate the worst status. A higher score on scale indicates better QoL.[11]

IHU and Non IHU definition: Non IHU was defined as any subject with opioid dependence whose predominant opioid was heroin and who has never ever injected any substance for psychoactive purposes. Any person whose predominant mode of use of heroin has been injection route in past six month and fulfilled criteria for opioid dependence was categorised as IHU. Fifty consecutive patients from each group were included in the final study.

Ethical approval for the study was taken from the institute's Ethical Committee prior to starting the study. The data were analyzed using SPSS version 20 (Armonk, NY, USA: IBM Corp.)

RESULTS

As shown in Table 1, most of the treatment seekers for heroin dependence were in the age group of 20-34 years (74% IHU and 76% Non IHUs, *P* value of 0.78). Mean age of heroin use among injection users was 25.72 (+ 6.70) years while as it 28.94 (+ 9.08) years in case of chasers. 72% injection heroin users and 76% were chasers in our study earnt less than 10,000 rupees ($129) per month. IHUs had an equal representation from both rural and urban areas, while in case of chasers, 82% were from urban areas, *P* value being statistically significant (less than 0.01) .78% of injection heroin users were belonged to nuclear families while as 72% chasers were living in nuclear families, the difference was statistically non-significant (*P* value of 0.32).

Table 2 depicts that mean duration of use of opioids was slightly higher in non-injection users (76.80 ± 52.43 months) than injection users (74.8 ±49.42 months), but the difference did not reach statistical significance. There was no statistical significant difference regarding the mean duration of opioid dependence (55.88 ± 42.27 months in IHUs vs 50.84 ± 43.16 months in chasers, $P < 0.85$). However, mean scores on opioid dependence severity (SODQ) were higher (42.45 ± 9.23) in injection users as compared to chasers (37.56 ± 8.28). This difference was statistically significant ($P<0.01$). 26% injecting heroin users were documented to be positive for anti-HCV antibodies and 1 injecting heroin user was also documented to have Human Immunodeficiency Virus infection. Also, 6% heroin chasers were also found to be positive for anti-HCV antibodies. Overall, there was statistical significant difference about the prevalence of medical disorders, *P* value 0.02. Mean quality of life psychological domain score was 15.00 ± 3.67 in injecting heroin users and 17.90 ± 5.64 in heroin chasers , the difference was statistically significant ($P =0.03$). There was no significant difference between two groups in other domains of quality of life. Even though IHUs had poorer total QOL scores (17.32 ± 3.33 vs 19 ± 4.32, $P = 0.44$, this difference did not reach statistical significance.

As depicted in Table 3, there were no differences between IHUs and chasers when compared regarding comorbid substance use ($P= 0.36$). Regarding opioid withdrawal management; as compared to chasers, IHUs had lesser Odds

	Variable	IHU	Non IHU	Chi-Square (*P*)
		Frequency (% /SD)	Frequency (% /SD)	
Age category	15-19	6 (12.00)	4 (8.00)	
	20-34	37 (74.00)	38 (76.00)	0.48 (0.78)
	35 and above	7 (14.00)	8 (16.00)	
Mean age		25.72 (6.70)	28.94 (9.08)	t= 1.45 (0.15)
Marital Status	Single	37 (74.00)	28 (56.00)	5.37 (0.03)
	Married	13 (26.00)	19 (38.00)	
	Others	0 (0)	3 (6.00)	
Occupation	Clerks/shop owners/farmers	13 (26.00)	21 (42.00)	3.39 (0.18)
	Unemployed	17 (34.00)	16 (32.00)	
	Others	20 (40.00)	13 (26.00)	
Socio economic	Up to Rs10,000	36 (72.00)	38 (76.00)	0.21 (0.82)
	Above Rs 10,000	14 (28.00)	12 (24.00)	
Education	Up to class 10th	23 (46.00)	13 (26.00)	4.34 (0.06)
	Beyond 10th	27 (54.00)	37 (74.00)	
Family	Nuclear	39 (78.00)	36 (72.00)	0.48 (0.32)
	Joint/ Extended	11 (22.00)	14 (28.00)	
Locality	Urban	25 (50.00)	41 (82.00)	11.41 (<0.01)
	Rural	25 (50.00)	09 (18.00)	

Table-1: Comparison of Socio-demographic profile of the participants

Variable	IHU	Non IHU	t (P) / Chi square (P)
	Mean (+ SD)/ N (%)	Mean (+ SD)/ N (%)	
Mean duration of use of opioid in months (SD)	76.80 (52.43)	74.88 (49.42)	1.45 (0.15)
Mean duration of dependence of opioids in months (SD)	55.88 (42.27)	50.84 (43.16)	0.19 (0.85)
SODQ	42.45 (9.23)	37.56 (8.28)	3.38 (0.04)
Medical Comorbidity			5.74 (0.02)
HCV	13 (26%)	3 (6%)	
HIV	1 (2%)	-	
Mean Quality of life scores-domain (+ SD)			
Physical	19.23 (3.31)	20.00 (3.22)	0.82 (0.41)
Psychological	15.00 (3.67)	17.90 (5.64)	2.23 (0.03)
Social	8.80 (2.18)	8.76 (2.64)	-0.05 (0.95)
Environmental	27.60 (3.22)	26.19 (3.38)	-0. 71(0.48)
Overall QoL	17.32 (3.33)	19.00 (4.32)	-0.65 (0.44)

IHU: injection heroin users ,QoL: Quality of Life, SODQ: Severity of Opioid Dependence Questionnaire

Table-2: Comparison of clinical profile of the participants

Variable	Mean (+SD)/ N (%)	Mean (+SD)/ N (%)	IHU versus Chasers	
	IHU	Chasers	OR (CI)	P
Co-morbid Substance use				
Nicotine use	43 (86%)	46 (92%)		0.36
Cannabis use	19 (38%)	14 (28%)	4.26	
Other substance us	4 (8%)	2 (4%)	(0.46-39.55)	
Any substance use	49 (98%)	46 (92%)		
Opioid Withdrawal management				
Clonidine	26 (52%)	44 (88%)	0.16 (0.05-0.44)	<0.01
Buprenorphine	17 (34%)	5 (10%)	4.64 (1.55-13.84)	<0.01
Opioid use disorder pharmacoprophylaxis				
Buprenorphine	19 (38%)	6 (12%)	1.79 (1.1-4.1)	<0.01
Naltrexone	12 (24%)	20 (40%)	0.47 (0.20-1.12)	0.13
Number of follow up				
None	3 (6%)	17 (34%)	0.12 (0.03-0.45)	<0.01
At least three follow up	33 (66%)	24 (48%)	2.10 (0.94-4.71)	0.10
Status at three month follow up				
Improved	41 (82.0%)	23 (46.0%)	8.07 (2.18-29.78)	<0.01
Worsened/Relapsed/No change	4 (8.0%)	15 (30.0%)	0.20 (0.06-0.66)	< 0.01

Table-3: Substance related comparison between two groups

of receiving clonidine (OR:0.16, CI :0.05-0.44) and this was statistically significant. IHUs had 4.64 odds of receiving Buprenorphine (CI-1.55-13.84) and this was statistically significant ($P< 0.01$). The difference between two groups persisted when patients were prescribed long term(IHUs vs chasers; OR:1.79, CI:1.1-4.1).IHUs had lesser odds of drop out on first instance as compared to chasers (6% vs 34%, OR: 0.12, CI : 0.03-0.45 , $P< 0.01$). However, when at least three follow up consultations were compared, there was no difference between two groups. At three months follow up, IHUs had higher odd of improving as compared to chasers (OR: 8.07, CI: 2.18-29.78, $P< 0.01$).

DISCUSSION

This was a retrospective study in which case files of subjects with opioid dependence disorder reporting between March 2018 to August 2019 to the de-addiction clinic of our institute were studied. Fifty consecutive patients above 18 years of age, having diagnosis of opioid use disorder as per ICD-10 and currently injecting heroin were compared with patients who were chasing heroin but had never tried heroin via injection route. Inferential statistics were used to find differences between two groups using parametric tests (Student's *t* test) and non-parametric tests (Chi-square test).

Socio-demographic profile

An all-male group in our study can be explained by the fact that in the context of India, most of the substance seeking treatment population as well as community substance users are dominated by males. Previous studies from India have also reported a male dominated substance using group.[12,13] As per the recent nationwide study conducted by government of India , only 0.2% Indian females were using opioids as compared to males where it was 4%.[2] Also, the only study from Kashmir on opioids had same findings.[5] Data from Western countries has shown that drug use has been associated with greater stigmatization, poor service utilization and different treatment seeking behaviors for women than men.[14] Most of the studies from Kashmir have also reported that treatment seeking opiate group would fall in the age group of 20-34 years as has been reported in our study.[3-5] The

majority of participants in our study were single, educated above class 10th, were of urban background and belonged to nuclear families. Our results could also be explained by the fact that majority of our subjects were from a relatively young age group, this may justify the higher percentage of literacy, employment and unmarried status of the subjects. A similar profile of has been reported for a typical opioid user as reported from Kashmir and rest of India.[4,12] As compared to IHU, chasers mostly were of urban background. Majority of participants living in rural areas were injection users as compared to chasers. This is consistent with a study done by Novak, which summarized that IDU use in rural areas is 'hidden epidemic' that needed urgent intervention. Similar observations could be extended to rural areas of Kashmir.[15]

Comparison of clinical profiles

We did not find any significant difference in duration of opioid use or dependence between two groups. Chasers thus had been using for a quite large periods of time, it may thus be suggested that chasing is quite a stable pattern of use and not merely be seen as precursor phase of regular heroin injecting. This suggestion has also been made in previous studies which have compared chasers versus injectors.[7,16] However longitudinal studies could provide a clear picture regarding this and whether chasers progress to injection pattern. It is believed that rate of progression to dependence may also be influenced by route of heroin use. Barrio suggested that the route of administration probably influences the rate of progression to dependence but has little influence on the long-run level of dependence. The rapid progression from use to dependence among IHUs is influenced by higher frequency of use of heroin among IHUs as compared to chasers.[8] In our study, we did not include frequency of heroin use and that might have accounted for different result. However, we found that IHUs had a higher severity of opioid dependence as compared to chasers which has also been found by Gossop et al.[7]

We found that IHUs had a higher prevalence of parentrally transmitted infections as compared to chasers. Unsafe injection practices including reusing and/or sharing of needles is the common risk factor for transmission of various infectious diseases among IHUs.[23] However, Non IHUs are not immune from such diseases as sharing of paraphernalia and unprotected sexual intercourse especially with commercial sex workers puts them at such risk as well.[18,19]

We found that psychological domain of quality of life was poorer among IHUs. This could be explained by the fact that injecting drug use is associated with greater stigmatization, poorer quality of psychological health and greater economic and interpersonal difficulties.[20] Poorer psychological scores could be because of injection related dermatological complications like skin abscesses which are usually associated with injection drug use. Overall, we did not report any difference in total quality of life scores between two groups, thus supporting Latkin et al. (2001) views' that heroin using population is homogenous group and there are no differences between heroin users who use different routes.[21]

Although previous studies have reported that IDUs were more likely to experiment with other substances, we did not observe any substantial differences between the two groups in the pattern of use of other substances.[16] This could also be explained that use of substances is also influenced by local cultural factors, local availability and laws related to substance regulation.

The probable reason why IHUs had lesser percentage of receiving clonidine could be explained by the fact that in our treatment center, buprenorphine is reserved for those having higher dependence scores. In our study, IHUs had higher SODQ scores and that could explain greater percentage of IHUs receiving buprenorphine as compared to clonidine. A dropout rate of 20% is similar as in another Indian study.[22] Buprenorphine was most commonly used for long term prophylaxis in injection users (38%) as compared to chasers (12%).Injection Heroin Users (IHUs) are more likely to receive OAT as it has been found the reduce the transmission of HIV and probably HCV which are more common among IDUs as compared to non injection drug users.[23]

Overall, only 25% patients were started on BPN pharmacoprophylaxis which is an area of concern. The probable reasons could be that at the time when this study was performed, there were only two OAT dispensing centers in Kashmir valley, both of which are located in urban areas. 34% of the study participants belonged to rural areas and thus lack quick access to OST centers. Higher rates of long term follow up among injection heroin users might be related to the use of buprenorphine which was used at higher frequency among IHUs as compared to those in chasers. Buprenorphine has been reported to have higher retention rates when used either as withdrawal management or long term prophylaxis in comparison to clonidine or naltrexone respectively.[24] Use of buprenorphine as maintenance treatment requires regular, long term follow up as a pre-requisite. Higher percentage of improvement in IHUs as compared to chasers could be alluded to OAT prescription among IHUs which has higher retention rates and results in better quality of life.[25,26] OAT has also been found to reduce the transmission of diseases like Hepatitis C.[27] This again emphasizes the need for expansion of OST services for heroin users as 13 out of 50 IHUs in our study were HCV positive.

Limitations

Ours was a retrospective study, and there are higher chances that many of facts may not have been documented in treatment record files. Representation of the study subjects was limited as it was restricted to treatment seeking group from a single centre, thus results may not be generalized to the community. We did not include psychiatric morbidity in the study since no instrument was used for assessment, this could have also affected quality of life between two groups. Future prospective studies could better update us regarding the differences between injectors and chasers.

CONCLUSION

This was the first study from Kashmir that compared injection

heroin users with chasers and found that there are few similarities like most of socio demographical variables and mean age of duration of heroin use/ dependence. Injectors had higher severity of opioid dependence, had higher odds of receiving buprenorphine as pharmacoprophylaxis and better follow up rates as compared to chasers. Buprenorphine as a treatment option for withdrawal management and long term maintenance treatment is exceptionally underutilized, despite evidence to the contrary.

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