ORIGINAL ARTICLE

STUDY OF RESPIRATORY PROBLEMS OF ADDICTION AMONG PATIENTS AT ABBASIA CHEST HOSPITAL

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Background: *There has been a substantial increase in the number of drug dependence patients in Egypt over the past years and these drugs may now be the most common cause of drug-induced pulmonary disease. Drug abuse and its sequel affect health of the abuser in multiple ways ,and one of the most commonly observed physical complications of drug dependence is pulmonary tuberculosis.*

The aim of this work was to study respiratory problems among addict patients at Abbasia Chest Hospital.

Design: *In this study 109 addict patients were enrolled and were subjected to full history taking consisting of history of drug addiction including (the 7 criteria questionnaire to obtain the definition of drug addiction, DAST 10 questionnaire and AUDIT questionnaire) and history of chest diseases, through clinical examination, radiological examination, routine laboratory investigations, arterial blood gases, viral markers for hepatitis and HIV, direct smear sputum examination for AFB, culture for pyogenic organism, culture for AFB, fiberoptic bronchoscopic work up when needed including (post bronchoscopic sputum examination, bronchial brushing, bronchial lavage, bronchial biopsy, BAL)and Echocardiography when needed. Patients were followed up for respiratory complications at Abbasia chest hospital during six months.*

Results: *Addict patients were 108 males (99.1%) and 1 female (0.9%). The mean age was 39.1±14.8. Cannabis was the most commonly abused drug constituting 67%of the abused drugs. Pulmonary tuberculosis was present in 35.8% of cases.25.7% of cases had parenchymal lung diseases. 6 cases (5.5%) had H CV,2 cases had HBV and 1 case had HIV. Also 6 cases (5.5%) died.*

Conclusion: *Drugs which are inhaled are those most likely to result in respiratory complications. Also, mortality was the largest among cases who abuse inhaled drugs representing 6.7% of inhaled drug abusers.*

Keywords: *Substance abuse, drug addiction, cannabis, opioids, heroin, cocaine.*

INTRODUCTION

Drug addiction can cause serious, long-term consequences including problems with physical and mental health, relationships, employment and the law.[1]

Drug abuse includes the use of illegal drugs—such as marijuana, methamphetamines, cocaine, heroin, or other

"street drugs"—and the abuse of legal prescription and nonprescription drugs. Some people use drugs to get a "high" or to relieve stress and emotional problems. Drugs like ecstasy (3,4-methylenedioxymethamphetamine) (MDMA), ketamine, Gammahydroxy-butyric acid (GHB), Rohypnol, and Lysergic acid diethylamide (LSD), which are known as "club drugs," may be found at all-night dances, raves, trances, or clubs. Club drug use accounts for increasing numbers of drug overdoses and emergency room visits. Inhalants like nitrous oxide may also be used at these clubs. Drugs come in different forms and can be used in different ways. They can be smoked, snorted, inhaled, taken as pills, put in liquids or food, put in the rectum or the vagina, or injected with a needle. Teens and young adults may be at risk for becoming victims of sexual assault or violent behavior in situations where these drugs are used.[2]

Certain symptoms that are used as diagnostic criteria, such as substance-related physical problems and withdrawal syndromes, may take years to develop, limiting their applicability to adolescents. In addition, withdrawal is unique in that it is the only criterion which varies by substance, necessitating an extensive list of possible withdrawal signs and symptoms specific to each substance.[3]

Drug dependence or addiction occurs when you develop a physical or emotional "need" for a drug. You are unable to control your use of a drug despite the negative impact it has on your life. You may not be aware that you have become dependent on a drug until you try to stop taking it. Drug withdrawal can cause uncomfortable and sometimes dangerous symptoms. The usual treatment is to gradually reduce the dose of the drug until you can completely stop using it.[2]

Aim of the work: The aim of this work is to study respiratory problems of drug addiction among patients at Abbasia Chest Hospital.

PATIENTS AND METHODS

This is a prospective study which was conducted upon 109 addict patients at different departments and intensive care units at Abbasia chest hospital during six months.

All the patients were subjected to the following:

1. ***Full history taking including both:***

   - History of drug addiction e.g.: type of the drug, method and route of addiction, duration and dose of drug addiction, questionnaire for drug addiction.

Questionnaire for drug addiction:

A. ***Questionnaire to obtain the definition of Addiction:***

If the patient answered yes to at least 3 of these questions, then he/she meets the medical definition of addiction. This definition is based on the American Psychiatric Association (DSM-IV) and the World Health Organization (International statistical classification of diseases and related health problems) (ICD-10) criteria.[4]

B. ***DAST-10 (Drug abuse screening test-10):***

   DAST-10 interpretation:

   - If DAST-10 suggested score was 0, no problems would be reported so nothing should be done at this time.[5]

   - If DAST-10 suggested score was 1-2, patient's level which is related to drug abuse would be low so the patient should be monitored and reassessed at a late time.[5]

   - If DAST-10 suggested score was 3-5, patient's level which is related to drug abuse would be moderate so the patient should be furtherly investigated.[5]

   - If DAST-10 suggested score was 6-8, patient's level which is related to drug abuse would be substantial so the patient should be intensively assessed.[5]

   - If DAST-10 suggested score was 9-10, patient's level which is related to drug abuse would be high so the patient should be intensively assessed.[5]

C. ***AUDIT questionnaire (Alcohol use disorder identification test):***

   A score of 8 or more is associated with harmful or hazardous drinking, a score of 13 or more in women, and 15 or more in men, is likely to indicate alcohol dependence.[6]

   - History of chest disease with especial emphasizes on respiratory symptoms e.g.: dyspnea, cough and expectoration, hemoptysis, chest pain, chest, wheezes, symptoms suggestive of mediastinal compression and toxic symptoms.

2. Thorough clinical examination (signs of drug addiction e.g. signs of pneumothorax, empyema, lung mass, septic emboli, pneumonia, pulmonary edema, pulmonary infarction and pulmonary hemorrhage).

3. Radiological examination including plain chest x-ray, posteroanterior view, CT chest if required.

4. Routine laboratory investigation.

5. C.B.C

6. Blood chemistry (including serum creatinine, blood urea nitrogen, ALT, AST and electrolytes).

7. Arterial blood gases if indicated.

8. Viral markers for hepatitis and HIV.

9. Urinary screening for drug substance. (If drug addiction is not diagnosed by history).

10. Pulmonary function test if possible.

11. Quantitative culture if there are signs of infection.

12. Sputum ZN for three successive days.

13. Tuberculin test.

14. Fiber optic bronchoscopic work up if needed.

Data Management and Analysis:

The collected data was revised, coded, tabulated and introduced to a PC using Statistical package for Social Science (SPSS 15.0.1 for windows; SPSS Inc, Chicago, IL, 2001). Data was presented and suitable analysis was done according to the type of data obtained for each parameter.

i. **Descriptive statistics:** Include Mean, Standard deviation (± SD), Median, Minimum and maximum values (range) for numerical data, Frequency and percentage of non-numerical data.

ii. **Analytical statistics:** Include ANOVA test which was used to assess the statistical significance of the difference between more than two study group means and Chi-Square test which was used to examine the relationship between two qualitative variables.

P- value: level of significance: $P > 0.05$= Non significant (NS), $P < 0.05$= Significant (S) and $P < 0.01$= highly significant (HS).

RESULTS

The cases of the study sample were 109 cases, males were 108 cases while females were 1 case. 53.2% of the study cases were within the age group 20-39 years. The mean age was 39.1±14.8. Also, 52.3% of cases were married and 43.1% of cases were manual workers. In addition to drug addiction, all cases were cigarette smokers. 22% of cases had respiratory failure. 6 cases (5.5%) had HCV, 2 cases had HBV and 1 case had HIV. Also 6 cases (5.5%) died. All cases had a score more than 3 in the 7 criteria questionnaire to obtain the definition of drug addiction.

Table 1. Description of Audit and dast 10 scores among study cases.

		N	%
Audit	<8	65	59.6%
	8-15	35	32.1%
	>15	9	8.3%
Dast 10	0	0	.0%
	1-2	0	.0%
	3-5	15	13.8%
	6-8	71	65.1%
	9-10	23	21.1%

N.B:
Most of the cases were poly substance abuse but to simplify the comparison between the abused drugs only the most common substance was chosen for each case.

Table 2. Comparison between inhalation and other route of addiction as regard diagnosis and final outcome.

		Inhalation				P	Sig
		Yes		No			
		N	%	N	%		
Diagnosis	Pleural	19	21.3%	7	35.0%		
	Parenchymal	23	25.8%	5	25.0%		
	Malignancy	6	6.7%	0	.0%	.363	NS
	Airway	7	7.9%	3	15.0%		
	TB	34	38.2%	5	25.0%		
Fate	Lived	83	93.3%	20	100.0%		
	Died	6	6.7%	0	.0%	.232	NS

Table 3. Comparison between oral and other route of addiction as regard diagnosis and final outcome.

		Oral				P	Sig
		Yes		No			
		N	%	N	%		
Diagnosis	Pleural	6	18.2%	20	26.3%		
	Parenchymal	12	36.4%	16	21.1%		
	Malignancy	1	3.0%	5	6.6%	.438	NS
	Airway	2	6.1%	8	10.5%		
	TB	12	36.4%	27	35.5%		
Fate	Lived	32	97.0%	71	93.4%		
	Died	1	3.0%	5	6.6%	.455	NS

Table 4. Comparison between IV and other route of addiction as regard diagnosis and final outcome.

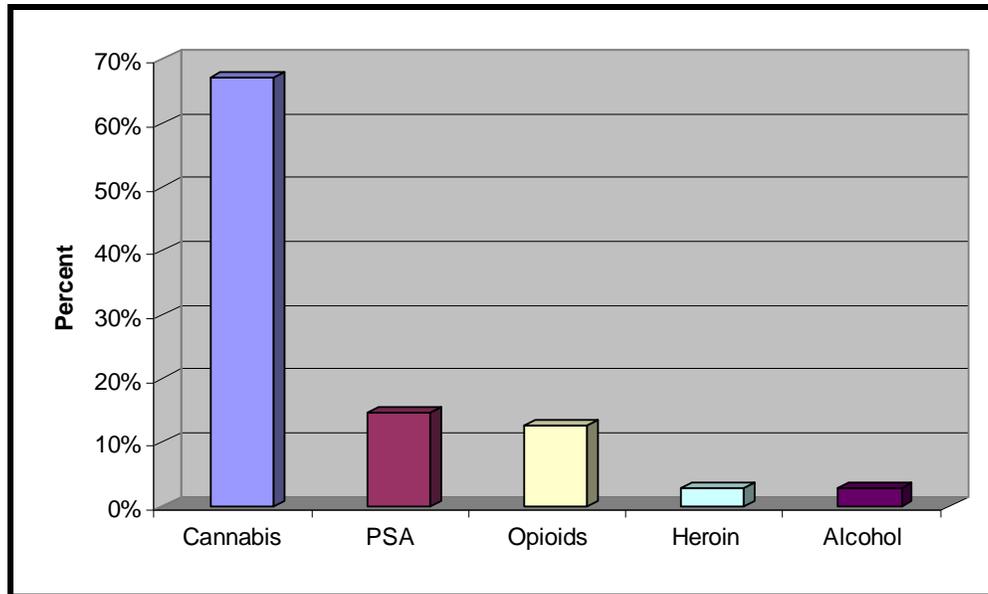|		IV				P	Sig
		Yes		No			
		N	%	N	%		
Diagnosis	Pleural	3	15.8%	23	25.6%		
	Parenchymal	7	36.8%	21	23.3%		
	Malignancy	1	5.3%	5	5.6%	.711	NS
	Airway	1	5.3%	9	10.0%		
	TB	7	36.8%	32	35.6%		
Fate	Lived	18	94.7%	85	94.4%		
	Died	1	5.3%	5	5.6%	.960	NS

Fig 1. Percentage of different abused drugs, Cannabis is the most commonly abused drug (67%) of study cases.

Table 5. Description of cases according to Diagnosis, treatment, interventions and final outcome.

		N	%
Diagnosis	TB	39	35.8%
	Parenchymal	28	25.7%
	Pleural	26	23.9%
	Airway	10	9.2%
	Malignancy	6	5.5%
Treatment	Medical	92	84.4%
	Surgical	9	8.3%
	Both	8	7.3%
MV	Yes	12	11.0%
	No	97	89.0%
Fate	Lived	103	94.5%
	Died	6	5.5%

Table 6. Comparison between Cannabis and non-cannabis abuser as regard diagnosis.

		Cannabis				P	Sig
		Yes		No			
		N	%	N	%		
Diagnosis	Pleural	18	24.7%	8	22.2%		
	Parenchymal	16	21.9%	12	33.3%		
	Malignancy	5	6.8%	1	2.8%	.710	NS
	Airway	7	9.6%	3	8.3%		
	TB	27	37.0%	12	33.3%		

Table 7. Comparison between opioid and non-opioid abuser as regard diagnosis.

		Opioid				P	Sig
		Yes		No			
		N	%	N	%		
Diagnosis	Pleural	4	28.6%	22	23.2%		
	Parenchymal	5	35.7%	23	24.2%		
	Malignancy	0	.0%	6	6.3%	.550	NS
	Airway	2	14.3%	8	8.4%		
	TB	3	21.4%	36	37.9%		

DISCUSSION

The use of illicit drugs is increasing, and these drugs may now be the most common cause of drug-induced pulmonary disease.[7]

This is a prospective study, which has been conducted upon 109 addict patients at different departments and intensive care units at Abbasia Chest Hospital during the past six months between October 2010 and April 2011.

From this study it was found that males were 108 (99.1%) of addict patients while females were 1 (0.9%).

Similar results were demonstrated by (Lamptey, 2005)[8] who studied the sociodemographic characteristics of 87 substance abusers who were admitted to a private specialist clinic in Accra Metropolis in Ghana between june 1997 and October 2002.Among the abused substances Cannabis, Heroin, Cocaine, Alcohol and Nicotine. It was found that males were 83 (90%) and females were 4 (10%).

However, difference might be due to different habits, traditions and cultures between the two societies.

In the present study the range of age was 17-77 years old with mean age 39.1 years.

This was in agreement with (Tai et al., 1996)[9] who studied acute heroin intoxication in 18 heroin related victims encountered in ER and ICU, the mean age was 27.2 years. However, this difference is due to inclusion of Heroin abusers only in (Tai et al., 1996)[9] study.

In the present study anaemia was present in 67.9% of cases.

This was similar to the results of (Imtiaz et al., 2007)[10] who studied association between drug dependence and anaemia in 64 drug dependent cases from 1st july 2000-31st December 2000.This was carried out in the Model Drug Abuse Treatment and Rehabilitation Center at District Headquarters Hospital Faisalabad in Pakistan. All patients were males and 89% of them had anaemia.

However, the difference may be due to polysubstance abuse and low socioeconomic status that lead to malnutrition in Pakistani patients.

In the present study, prevalence of pulmonary TB was 35.8% of all drug addict cases.

This was in accordance with (Oeltman et al., 2008)[11] who studied the association between substance abuse and tuberculosis. The study population consisted of all incident TB cases in persons 15 year s or older reported to the Centers for Disease Control and Prevention National Tuberculosis Surveillance System (NTSS) from all 50 states and the District of Columbia from 1997 through 2006. From 1997 through 2006, 153, 268 cases of TB among US residents 15 years or older were reported to the NTSS, of which 145, 276 (94.8%) had information about substance abuse. Injection drug use was reported by 3972 of these patients with TB (2.6%), non–injection drug use by 11, 616 (7.6%), excessive alcohol use by 23, 138 (15.1%), and at least 1 category of substance abuse by 28, 650 (18.7%).

Persons who abuse substances may have less access to routine medical care, potentially leading to delayed diagnoses. As the disease progresses, patients tend to become more contagious. During a TB outbreak investigation among long-term marijuana users, despite feeling ill and reporting increased coughing, patients delayed seeking care until their cases of TB were advanced and primarily cavitary.

This is inconsistent with (Askarian et al., 2001)[12] who studied tuberculosis among 319 never jailed drug addicts aged 18-50 years admitted to a correctional center in shiaz, southern Islamic republic of iran, in 1997.prevalence rate of pulmonary TB was 2.5%.

Difference between the present study and (Askarian et al., 2001)[12] study may be attributed to that (Askarian et al., 2001)[12] studied Heroin and Opium addicts only, also due to malnutrition, bad hygiene, limited ventilation, overcrowding, poor health condition, lifestyle and lack of routine medical care of drug addicts in Egypt which delay diagnosis. As the disease progresses, patients tend to become more contagious and consequently more infectious.

In the present study, 37% of cannabis smokers had pulmonary TB compared with 33.3% of non-cannabis abusers.

On the other hand, (Mathur and Chaudhary, 1996)[13] studied the increased risk of tuberculosis in 124 opium addicts in India. All the 124 opium addicts were men above 14 years age and all were living in rural areas of desert of western Rajasthan and were taking treatment of pulmonary tuberculosis. 20% of them were found to be opium addicts, riving prevalence of 16.1%.In cases with opium addicts, the addiction always preceded the pulmonary TB.

The difference had occurred because (Mathur and Chaudhary, 1996)[13] Studied the relation between opium and pulmonary tuberculosis only.

This is against (Aldington et al., 2007)[14] who studied the risk of lung cancer associated with cannabis smoking in 79 cases of lung cancer under 55 years age and 324 controls without lung cancer in Newzeeland in 2002.this was found that the risk of lung cancer increased 8% for each joint-yr of cannabis smoking, after adjustment for confounding variables including cigarette smoking, and 7% for each pack-yr of cigarette smoking, after adjustment for confounding variables including cannabis smoking. In conclusion, the results of (Aldington et al., 2007)[14] study indicate that long-term cannabis use increases the risk of lung cancer in young adults.

This difference between the two studies may be due to difference in amount, frequency and duration of cannabis abuse. Also impairment of immunity by cannabis in cannabis abusers along with their malnutrition in the present sample was contributing factors for pulmonary tuberculosis.

Drug addiction significantly lowers immunity by decreasing natural killer cell activities and decreasing gamma interferon production. The addict's diet and lifestyle have indirect effects on the immune system and lower human defence mechanisms thereby increasing susceptibility to infection. Furthermore, interleukin production and B-cell and T-cell proliferation declines. Two other indirect mechanisms have also been proposed. The first mechanism might be hypothalamus-hypophysis adrenal activation and increased adrenal corticosteroid production. The second might be the activation of sympathetic nervous system catecholamine release and

the suppression of natural killer cells.[15]

In the present study, 35.7% of opioid abusers had parenchymal lung diseases compared with 24.2% of non-opioid abusers.the opioid abusers who had parenchymal diseases were as the following: 2 patients had Rt basal pneumonia with minimal Rt parapneumonic pleural effusion (diagnosed by chest Ultrasound), 1 patient had Rt midzonal pneumonia only, 1 patient had lung abscess with pneumonia on top and 1 lung abscess only.

Therefore, the results of the present study resemble to some extent the results of Suzanne et al. (1999)[16] who studied talcosis associated with IV abuse of oral medications. They retrospectively analyzed the CT scans of 12 patients with talcosis associated with IV drug abuse. Some of these patients (seven patients) had injected IV opioids, either alone or in combination with heroin, cocaine, or pentazocine which is an Analgesic; synthetic opiate partial agonist used for the Relief of moderate to severe pain such as that associated with acute and chronic medical disorders including cancer, orthopedic problems, renal or biliary colic, and dental surgery.[17] Other patients (five patients) gave a history of IV injection of various oral drugs. The various drugs included diazepam, acetaminophen, meperidine, heroin, cocaine, pentazocine and methadone, frequently in combination. All patients were cigarette smokers (15-60 pack-years). The diagnosis of pulmonary talcosis was made histologically in 11 patients and at funduscopy in one patient. Five (42%) of the 12 patients had innumerable small lung nodules. In all five patients the nodules were 1 mm or less in diameter. The nodules created a fine granular appearance that, in many areas, was sufficiently profuse to resemble ground-glass opacification. The fine granularity involved all three lung zones to a similar extent except for sparing of emphysematous portions of the lung. Conglomerate masses were seen in three (25%) patients. In summary, the predominant abnormalities on CT consisted of a diffuse fine nodular pattern, a combination of nodules and conglomerate masses, lower lobe panacinar emphysema, a combination of nodules and lower lobe panacinar emphysema, ground-glass attenuation, and upper lobe centrilobular emphysema. In five patients emphysema was the only finding.

This was also in agreement with (Sieniewicz and Nidecker, 1980)[18] who studied conglomerate pulmonary diseases in four patients. All had received methadone for treatment of heroin addiction.the unique feature in these patients is the formation of conglomerate masses in the lungs due to the IV use of methadone tablets that contain talc.

Therefore the results of the present study are similar to some extent to the results of (Suzanne et al., 1999; Sieniewicz and Nidecker, 1980).[16,18]

It is noteworthy that in the present study 2 cases (66.7%) of heroin abusers had pleural diseases compared with 1 case (22.6) of non-heroin abusers. One was 35 years old male heroin abuser with history of heroin powder inhalation, presented at ER in Abbasia Chest hospital with dyspnea and chest pain for 10 days. He had left pyopneumothorax. Left intercostal tube was inserted then the patient developed surgical emphysema which was corrected then decortication of left pleura was done. The other case was 26 years old male, student, IV heroin abuser came to Er of Abbasia Chest hospital with dry cough, dyspnea and right stapping chest pain for 4 days. He had right spontaneous pneumothorax. Right intercostal tube was inserted.

This coincide with (Cohen and Cohen, 2010)[19] who reported two cases of bilateral pneumothorax in drug addicts. One was 30 years old (methadone abuser) with history of heroin injection in Rt and Lt subclavian areas,presented at Kings Country ER in New York city with Lt sided chest pain for seven days. The other case was 23 years old black female heroin addict came to Bellevue Hospital ER in New York City with shortness of breath, the patient failed to establish peripheral vein access and attempts at injection of both jugular veins failed.

In the present study, respiratory failure was present in 22% of the patients studied diagnosed by arterial blood gases.12 cases (11%) had respiratory failure type 1 (hypoxia only) and 12 cases (11%) had respiratory failure type 2 (hypoxia and hypercapnia) with respiratory acidosis. This was significant in cannabis abusers (24.7%) compared with (16.7%) of non-cannabis abusers.

Karl et al. (2001)[20] studied heroin related Non cardiogenic pulmonary Edema in 162 patients who presented with the diagnosis of heroin overdose and were admitted to the medical service at San Francisco General Hospital during 53-month period from August 1994 to December 1998.A total of 27 patients met the criteria for the diagnosis of Non Cardiogenic Pulmonary Edema with a majority of being males (23males) (85%) in the NCPE cohort with average age 34 years.

The difference in the results between our study and (Karl et al., 2001)[20] study may be explained by the fact that (Karl et al., 2001)[20] studied one substance only, which is heroin, but in our present study we studied all substances used by the addict population in Abbasia Chest hospital.

Another reason which might explain the difference between the two studies was that (Karl et al., 2001)[20] were concerned with the diagnosis of heroin over dosage. This issue (heroin over dosage) was not encountered in our study population during the whole period of the study.

This was not in agreement with (Tai et al., 1996)[9] who studied heroin related diseases encountered in ER and ICU between1990-1993. Eighteen cases were collected retrospectively, of which (40%) had respiratory failure due to pulmonary edema.

The difference between the two studies may be attributed to the following: Abuse of poly substance but cannabis more commonly by cannabis abusers. And not all heroin abusers in our study reached heroin overdose to develop Non Cardiogenic Pulmonary Edema or repiratory failure depending on the dose and the duration of abuse.

In the study, the prevalence of HIV infection among the study cases was 0.9%.The prevalence of HCV and HBV together was 7.3%.The HIV cases was 1 and was cannabis abuser.

This agreed with (Ben-Haim et al., 1988)[21] who had reported a case of HIV-positive young IV heroin addict who was admitted with respiratory distress, fever and a disseminated bilateral pulmonary process (talc granuloma). For the last four years, he used methadone and flunitrazepam orally. Sometimes the patient used a mixture of methadone with strawberry syrup and talc for intravenous self-injection.

However, in our study, HIV infection occurred in a cannabis abuser because he was actually PSA but he used cannabis more than other drugs. Also, an association that probably was not causal but most likely represented uncontrolled confounding by male homosexual behavior.

This was not in accordance with (Drobniewski et al., 2005)[22] who studied tuberculosis, viral hepatitis, HIV prevalence and intravenous drug abuse in prisoners. They studied 1345 prisoners with pulmonary TB -who were recruited from prison TB hospital colony – over 1 year from November 2001 to October 2002 in Samara city in Russia. The prisoners were nearly all males. The principal clinical features of the prisoners interviewed were typical of those with pulmonary TB. With the exception of a productive cough (83.6%), fatigue (79.7%) and shortness of breath (52.7%), most features were exhibited by only a minority of patients, emphasizing the importance of laboratory confirmation of TB. The rates of HIV and viral hepatitis were higher in intravenous drug users (IDUs) compared with prisoners who did not inject drugs, based on those answering the question on IDU (10.7% versus 11.1%, p<0.05; and 34.1% versus 28.9%, p>0.05). The rate of co-infection with HIV was 6.0% overall, but was significantly higher (12.2%) in prisoners compared with civilian TB patients (1.7%). Viral hepatitis was seen in 24.1% of prisoners, reflecting the high rates of jaundice observed (16.5%).

The difference between our study and (Drobniewski et al.,

2005)[22] may be due to the difference in the number of cases in both studies.Also in (Drobniewski et al., 2005)[22] study, prisoners were exposed to malnutrition and bad hygiene which were contributing factors for HIV infection and viral hepatitis.

In the present study, vegetation on Tricuspid Valve was present in 44.4% of cases.

This is not consistent with (Ashraf et al., 2009)[23] who studied the effect of vegetation size on the outcome of infective endocarditis in intravenous drug users. They studied 34 patients admitted to a university hospital (Imam Reza hospital, Mashhad, north east of Iran) in a four years period during March 2001-February 2005 and analyzed prospectively. Injection drug users were defined as patients who had injected drugs intravenously within the past three months before admission. The diagnosis of infective endocarditis was made on the basis of modified Duke Criteria using transthoracic or transesophageal echocardiography. The involvement of Tricuspid valve was 26 cases (74.3%).

The difference may be due to the study of intravenous drug users only by (Ashraf et al., 2009).[23]

Nevertheless, the nature and the duration of the two studies (Ashraf et al., 2009)[23] study and the present study should be considered while interpreting the results as far as endocarditis with vegetations in IV drug abusers is concerned.

In the present study, 6.8% of cannabis abusers died compared with 2.8% of non-cannabis abusers.

This was in accordance with (Stephen et al., 1997)[24] who studied Marijuana use and mortality in 65171men and women of Kaiser Permanente Medical Care Program enrollees, aged 15 through 49 years (mean age, 33 years), who completed questionnaires about smoking habits, including marijuana, alcohol and tobacco use, between 1979 and 1985. The subjects were undergoing multiphasic health checkups in the San Francisco (until 1980) and Oakland Kaiser Permanente facilities. Mortality was followed through December 31, 1991.current marijuana users were 42%. There were1.2% deaths of all marijuana users (256 men and 61 women).

In the present study, there was no fatality in the sample of heroin abusers.

This was in agreement with (Tai et al., 1996)[9] who studied heroin related diseases and acute heroin intoxication in 18 heroin addicts encountered in the emergency room and intensive care unit between 1990-1993.He had no fatality in his sample.

This was not consistent with (O'Donnell et al., 1995)[25]

who studied pulmonary complications of intravenous (IV) drug abuse in 53 patients with history of IV drug abuse, at the District of Columbia General Hospital. The records of 51 of these 53 patients were available for final analysis. Forty three (84%) of the patients were survived.

Difference between the present study and (O'Donnell et al., 1995)[25] study had occurred due to difference in the number of heroin abusers between the present study and (O'Donnell et al., 1995)[25] study.

In the present study, poly substance abusers were 16 patients. They abused various substances e.g. Cannabis, Tramadol, Opium, Benzodiazepine (Clonazepam) and Heroin in addition to Alcohol and Cigarettes. they were 7 patients of pulmonary tuberculosis, 5 patients of pneumonia, 1 patient of multiple lung abscesses which were more obvious in the Ct scan which showed multiple cavitary lung lesions with consolidative patches of the middle lobe and lingua, 1 patient of idiopathic pulmonary fibrosis diagnosed by CT scan, 1 patient of malignancy (adenocarcinoma) diagnosed by CT guided biopsy and 1 patient of pleural effusion.

Although, it is difficult to specify the offending substance responsible for the particular lesion. Yet, these addictive substances, considered together, were responsible for these pathological or radiological lesions either individually or collectively.

Again, the number of patients, duration and nature of the study should be considered while comparing the results of the present study with the reports and the results of other studies.

CONCLUSION

Thoracic complications of illicit drug use vary depending on the drug that has been abused and the route of administration. The most commonly abused drugs that affect the respiratory system are cannabis then opioids (eg. tramadol and opium) then heroin.

Drug users remain a group at high risk of TB infection and disease, and intravenous drug users have been an important factor in HIV-associated TB epidemics worldwide. Treatment barriers, including poor adherence and limited access to care, pose unique challenges for treatment of drug users but serve as modifiable risk factors that should be the focus of future interventions.

Drug and alcohol disorders can occur in any patient seen in family practice, and they are present in many more patients than are diagnosed. Physician awareness of the potential for such problems is the first step in detecting, evaluating and treating patients who are substance abusers. In some cases, treatment is possible in the office

setting. In others, the physician oversees inpatient treatment or makes referrals and provides long-term collaborative follow-up, all of which are essential if the patient is to avoid a relapse.

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