ORIGINAL ARTICLE

To Study the Pattern of Drug of Abuse in Patients of Psychiatry Department Mayo Hospital, Lahore

AQSA IQBAL[1], REHMA DAR[2], FAUZIA SADIQ[3], *RUKHSANA GULZAR[4]*
[1]BSC MLT.King Edward Medical University
[2]Assistant Professor King Edward Medical University
[3]Associate Professor Lahore Medical and Dental College, Lahore
[4]Assistant Professor Red Crescent Medical College, Lahore
Correspondence to Dr. Fauzia Sadiq Email: drfauziafaraz@hotmail.com Cell: 0300-4278556

ABSTRACT

Background: Drug addiction has remarkably increased over the past decade and it has become a major health challenge in whole world. According to world drug report 2017, 29.5 million people globally suffer from drug addiction. It is estimated that about 6.7 million people in Pakistan are drug addicts and it is more common in age of 25 to 39 years.
Aim: To study the pattern of drug of abuse in patients of Psychiatry department Mayo Hospital, Lahore.
Methods: It is aDescriptive study carried out in Psychiatry Department Mayo Hospital/ King Edward Medical University, Lahore in **3** months duration starting from 1st July 2018 to 30th Sep, 2018 by Non-probability convenient sampling technique. All samples referred from Psychiatry Department to laboratory for drug of abuse analysis were included in study. and Improperly labeled and inadequate samples were excluded.
Results: Out of 200 samples, 189(95%) were male and 11(5%) were female. Mean age±SD was 30.9± 7.5 years. 157(79%) samples were positive for marijuana and morphine, 149(75%) were positive for benzodiazepines, 12(6%) were positive for tricyclic acid antidepressants and 1(0.5%) were positive for cocaine, amphetamine, methamphetamine and phencyclidine. Single, double, triple and tetra drug abusers were 39 (19%), 52(26%), 97 (49%), 12 (6%) respectively.
Conclusion: Drug abusers were mostly between 20 to 40 years of age. Marijuana and Morphine were the most commonly used drugs of abuse followed by Benzodiazepines
Key words: Drugs of abuse, Pattern. Marijuana.

INTRODUCTION

Use of any drugs for gaining benefits other than medical and research purpose is consider as drug of abuse[1]. It is a series of transition from voluntarily intake of drug toward habitual and irresistible use of drug[2].

Drug addiction has remarkably increased over the past decade and it has become a major health issue in whole world. According to world drug report 2017, 29.5 million people globally suffer from drug addiction[3].According to 2013 survey report on "Drug Use in Pakistan" it is estimated that about 6.7 million people in Pakistan are drug addicts[4].

Mortality and morbidity due to drug addiction is attributed to drug related diseases, road side accidents, criminal activities, suicides and damage to ethical behavior of societies[5]. Drug induced diseases like blood borne viral and bacterial infections, pulmonary diseases, anxiety and psychosis increase the global burden of diseases. In 2014, drug related death contributes to about 14.7 per 100,000 in United States[6].

The prevalence of blood borne viruses like Human immunodeficiency virus, Hepatitis B virus and Hepatitis C virus is increasing day by day among intravenous drug abusers[7-8]. Drugs of abuse are classified as Licit and Illicit drugs. All drugs that are legally allowed to sale and purchase are licit drugs. Licit drugs include alcohol, tobacco, caffeine and prescription medicines including benzodiazepines, barbiturates, codeine syrups, morphine, methadone and tricyclic acid anti-depressants. Illicit drugs

----

are legally banned for use. Illicit drugs include heroin, opiates, cannabinoids, marijuana, methamphetamines and cocaine[9].

Over activation of brain system and feeling of pleasure seeking encourage a person to repeat this action and their long term use develop dependency for drugs[10] People use drugs to decrease their stress and to become intoxicated. According to survey, mostly young people use drugs to stay awake at night to increase concentration ability and to enhance feelings during sex. About 96 percent young use drugs to feel relax and 88 percent use drugs to increase their activity level[11].

Drugs of abuse can be detected in blood, urine, hair, nail, saliva and other body fluids. Urine is the sample of choice for drug testing because it is easy to collect and it contain high concentration of drugs and its metabolites[12].

Drugs can be analyzed by screening methods and confirmatory methods. Screening methods are inexpensive, easy to perform and provide rapid analysis. Thin layer chromatography and immunoassay are the screening methods. In screening methods, there are chances of false positive results due to lack of specificity and cross reactivity issues so the screening method used must have good specificity and sensitivity to avoid false negative and false positive results. All positive results from screening methods must be confirmed by highly specific confirmatory methods. High performance thin layer chromatography and mass chromatography mass spectrometry are the confirmatory methods[13].In this background, this study was planned to study the pattern of drug of abuse in patients of Psychiatry department Mayo hospital, Lahore.
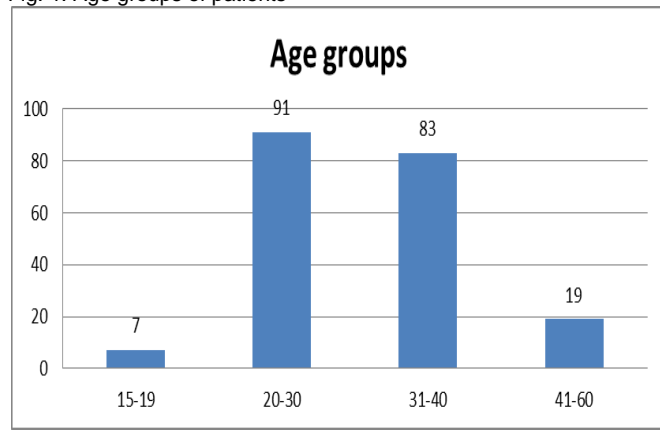
MATERIALS AND METHODS

This Descriptive study was conducted at Psychiatry Department Laboratory, Mayo Hospital/ King Edward Medical University, Lahore in three months duration after approval from the Institutional Review Board. All study samples were referred from Psychiatry department to laboratory for analysis of drug of abuse during period of 3 months duration through Non-Probability convenient sampling technique. Improperly labeled and inadequate samples were excluded.

Data collection procedure: The urine sample of study subjects was collected in sterile container. The drug testing was done by ABON multi drug testing Immuno-chromatography device. The device was used to test 9 drugs; Methamphetamine (MET), Cocaine (COC), Marijuana (THC), Benzodiazepines (BZO), tricyclic Anti-Depressant (TCA), Barbiturates (BAR), Phencyclidine (PCP), Amphetamine (AMP), Morphine (MOP) and Methadone (MTD).Three drops of urine were applied with the help of dropper to each specimen well of the test device. The results were noted after 5 minutes in terms of colored line. A colored line both in control line region(C) and in test line region (T) for a specific drug indicated a negative result. A colored line in the control line region(C) but no line in test line region (T) for a specific drug indicated a positive result. The results of drugs of abuse and other relevant information of patients were noted on proforma. All collected data was entered and analyzed by using Statistical package for social sciences (SPSS version 20). Quantitative variables like age was presented as mean ± SD. Qualitative variables like gender, positive results for drugs and number of drug of abuse were presented as frequency and percentage.
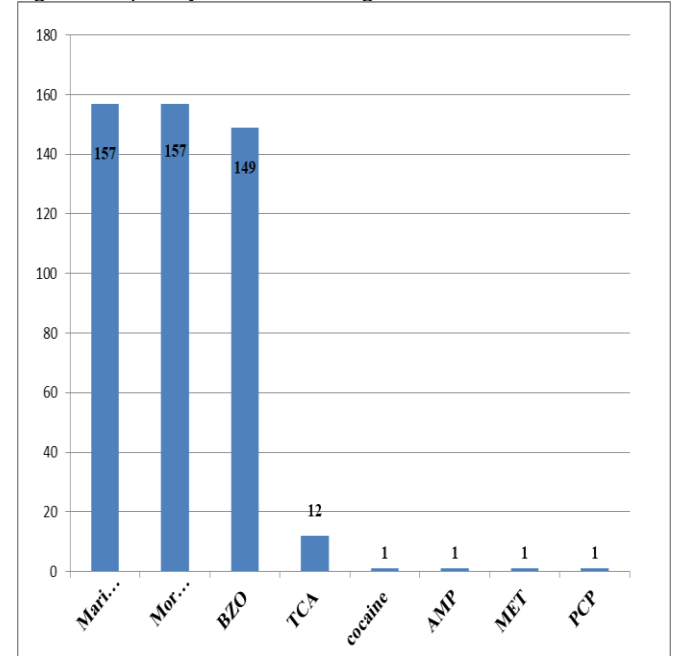
RESULTS

Fig. 1: Age groups of patients

Out of 200 samples, 189(95%) were males and 11 (5%) were female. Mean age ± SD was 30.9± 7.5 years. The age distribution of the patients using different drugs is given in Fig.1. Drug addiction is more common in age group of 20-40 years. Among samples 157 (79%) samples were positive for marijuana and morphine, 149(75%) were positive for benzodiazepines, 12(6%) were positive for tricyclic acid anti-depressants and 1(0.5%) were positive for cocaine, amphetamine, methamphetamine and phencyclidine. Out of 200 samples, 157 were positive for

marijuana and morphine, 149 were positive for benzodiazepines, 12 were positive for tricyclic acid antidepressants, 1 was positive for each of cocaine, amphetamines, methamphetamine, phencyclidine and no sample was positive for Barbiturates (Fig.2). The frequency of single double, triple and tetra drug abusers were 19%, 26%, 49% and 6% respectively.

Fig. 2: Frequency of different drugs of abuse

DISCUSSION

Drug addiction has become an emerging health hazard and it is currently at an alarming level around the globe[14]. According to 'World Drug Report' about 5 percent of adult population suffered from drug addiction in 2015[3]. Drug addiction has become a major threat as it causes disability and premature death across the world(3). Drug addiction has become the third most common cause of death in England[15]. Drug addiction increases the risk of hepatitis B, hepatitis C, sexually transmitted diseases and violence[16].

The major causes of drug addiction are that children are neglected due to collapse of family system, lack of parental care involvement in child's activities, lack of self-confidence, anxiety due to class difference, excessive stress, peer pressure and readily availability of drugs[14]. It not only affects individuals but also causes economic and social loss in terms of health care, crime and violence[17]. This study was planned to study the pattern of drug of abuse in pts of Psychiatry Dept Mayo Hospital, Lahore.

In our study, 200 urine sample were analyzed for drugs of addiction, 189 (95%) were males and 11(5%) were females. This is comparable to study of Carliner et al and Becker et al in which drug addiction is more common in men than women[18-19]. 'Pakistan Ministry of Interior and Narcotics Control' also reported increased frequency of drug addiction in men[4].

The mean age ± SD of subjects in our study was 30.9± 7.5 years (range 15-60). This is comparable to 'World Drug Report' which show drug addiction is common in age group of 15 to 64 years[3]. This is different from study by

McCabe et al, Kroutil et al and Abuse S in which drug addiction is more prevalent among young adults of 18-25 years old[20-22]. This difference might be related to socioeconomic status of study population. In our study, Marijuana (THC) and Morphine 157(79%) was the most common drug of addiction followed by Benzodiazepines 149(75%), Tricyclic acid antidepressants 12(6%) and Cocaine, Amphetamine, Methamphetamine and Phencyclidine (1, 0.5%).

Marijuana and Morphine being the most commonly abused drugs is comparable to 'The Annual Profile for Substances Misuse' in which opiates including morphine, heroin, methadone and cannabinoids were reported as the most common drugs of addiction during 2016 to 2017[23].This is also comparable to National Survey on Drug Use and Health in America which stated that Marijuana was the recognized as most commonly used illicit drug. About 80.6 percent of drug addicts used Marijuana in 2013[24]. The study by Carliner et al and Johnston et al also showed that marijuana addiction is increasing[18, 25].·One of the reason of such an increasing level of Marijuana is the legalization of marijuana for clinical purposes in about 33 states of the world[26].In addition to Marijuana, Morphine is the other most abused drug and leading cause of death related to drug poisoning in 2016[15].

In our study, single and multiple drug abusers were 39(19%) and 161(81%) respectively. Multiple drug addiction is more common than single in our study and this is comparable to 'Drug Use In Pakistan' in which multiple drug addiction is more common[4]. This is different from study by McCabe et al which stated that single drug addiction is more common[20]This difference might be that most of the people in our system use drugs for self-treatment and recreational purposes initially and later become dependent on them and develop drug addiction.

CONCLUSION

1. Marijuana and Morphine are the most commonly used drugs of abuse followed by benzodiazepines
2. **Drug addiction is more common between 20 to 40 years of age.3.Multiple drug abuse is more common than then single drug abuse.**

Limitations: Sample size was small due to time and financial constraints and drug testing was done by screening method and was not confirmed by confirmatory methods.

REFERENCES

1. F Ali S, S Onaivi E, R Dodd P, L Cadet J, Schenk S, J Kuhar M, et al. Understanding the global problem of drug addiction is a challenge for IDARS scientists. Current neuropharmacology. 2011;9(1):2-7.
2. Everitt BJ, Robbins TW. Neural systems of reinforcement for drug addiction: from actions to habits to compulsion. Nature neuroscience. 2005;8(11):1481.
3. World drug report 2017. UNO on drug and crime.
4. Drug use in Pakistan 2013. Pakistan Ministry of Interior and Narcotics Control, Pakistan bureau of statistics and united nation office on drug and crime, 2013.
5. Nutt D, King LA, Saulsbury W, Blakemore C. Development of a rational scale to assess the harm of drugs of potential misuse. The Lancet. 2007;369(9566):1047-53.
6. Rudd RA, Aleshire N, Zibbell JE, Matthew Gladden R. Increases in drug and opioid overdose deaths—United States, 2000–2014. American Journal of Transplantation. 2016;16(4):1323-7.
7. Mathers BM, Degenhardt L, Phillips B, Wiessing L, Hickman M, Strathdee SA, et al. Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review. The Lancet. 2008;372(9651):1733-45.
8. Nelson PK, Mathers BM, Cowie B, Hagan H, Des Jarlais D, Horyniak D, et al. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. The Lancet. 2011;378(9791):571-83.
9. Principle of adolescent substance use disorder treatment. 14 January 2014; Available https://www.drugabuse.gov/publicaions.
10. Volkow ND. Drugs, brains, and behavior—the science of addiction. Retrieved on March. 2010;23:2011.
11. Boys A, Marsden J, Strang J. Understanding reasons for drug use amongst young people: a functional perspective. Health Education Research. 2001;16(4):457-69.
12. .Wiencek JR, Colby JM, Nichols JH. Rapid assessment of drugs of abuse. Advances in clinical chemistry: Elsevier; 2017. p. 193-225.
13. Kaufman EA. testing for drug of abuse,method and reliability: journal of law and health.
14. Parmar P, Rathod GB, Rathod S, Parikh A. Drug Abuse and Illicit Drug Trafficking Vis-A-Vis Human Life A Review. La PrensaMedica. 2018;2015.
15. Middleton J, McGrail S, Stringer K. Drug related deaths in England and Wales. BMJ: British Medical Journal (Online). 2016;355.
16. Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. Pediatrics. 2003;111(3):564-72.
17. Birnbaum HG, White AG, Schiller M, Waldman T, Cleveland JM, Roland CL. Societal costs of prescription opioid abuse, dependence, and misuse in the United States. Pain medicine. 2011;12(4):657-67.
18. Carliner H, Mauro PM, Brown QL, Shmulewitz D, Rahim-Juwel R, Sarvet AL, et al. The widening gender gap in marijuana use prevalence in the US during a period of economic change, 2002–2014. Drug and alcohol dependence. 2017;170:51-8.
19. Becker JB, Hu M. Sex differences in drug abuse. Frontiers in neuroendocrinology. 2008;29(1):36-47.
20. McCabe SE, Boyd CJ, Teter CJ. Subtypes of nonmedical prescription drug misuse. Drug and alcohol dependence. 2009;102(1-3):63-70.
21. Kroutil LA, Van Brunt DL, Herman-Stahl MA, Heller DC, Bray RM, Penne MA. Nonmedical use of prescription stimulants in the United States. Drug and alcohol dependence. 2006;84(2):135-43.
22. Abuse S. Results from the 2005 national survey on drug use and health: national findings. http://wwwoassamhsagov/nsduh/2k5nsduh/2k5Results pdf. 2006.
23. The Annual Profile for Substances Misuse. Public health wales, Cardiff. UK.; 2017.
24. Abuse S. Mental Health Services Administration (SAMHSA)(2014) Results from the 2013 national survey on drug use and health: summary of national findings. Substance Abuse and Mental Health Services Administration, Rockville, MD. 2014.
25. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the Future national results on adolescent drug use: Overview of key findings, 2012. 2013.
26. Martins SS, Mauro CM, Santaella-Tenorio J, Kim JH, Cerda M, Keyes KM, et al. State-level medical marijuana laws, marijuana use and perceived availability of marijuana among the general US population. Drug and alcohol dependence. 2016;169:26-32.