

DRUG ABUSE AND ADDICTION- A REVIEWDr. Khushboo Karte*¹, Dr. S. R. Inchulkar² and Dr. Yuvraj Kaushik³M.D.Scholar¹, HOD & Professor², Lecturer³

Department of Agadanttra Evum Vidhi Ayurved Government Ayurved College Raipur, Chhattisgarh, India.

***Corresponding Author: Dr. Khushboo Karte**

M.D.Scholar Department of Agadanttra Evum Vidhi Ayurved Government Ayurved College Raipur, Chhattisgarh, India.

Article Received on 24/09/2020

Article Revised on 14/10/2020

Article Accepted on 04/11/2020

ABSTRACT

Drugs are commonly used to denote medicine in medical parlance which produces physiological and psychological effects on human but drug abuse refers not to drugs used by physicians but drugs used for intoxication purpose. Nowadays, words addiction and addict are not used in medicine due to their derogatory implication, instead of abuse or harmful use or dependence is used. Drug dependence includes both addiction and habituation. Drug abuse is the use of illegal drugs or the use of prescription or over the counter medications in way other than recommended or intended. Tobacco use & Alcohol problem are sometime included in the definition of drug abuse.

KEYWORDS: Drug abuse, Addiction, Psychoactive drugs, Classification of abusing drugs, Sign & Symptoms.**INTRODUCTION**

The history of drug abuse/ dependence dated back to the days of antiquity. As per available literature, opiates were consumed by Mesopotamians and were used for medicinal purpose by Egyptians, Greeks and Arabs.^[1] Nowadays words addictions and addicted are not used in medicine due to their derogatory implication. The topic covers pattern of drug use disorders and drug habituation, criteria for diagnosis of substance dependence, focussing on dependence producing drugs, general as well as specific symptoms of drug addicted, complication of drug abuse, their treatment, post-mortem finding, classification of abusing drugs. There are several definitions for drug abuse or drug addiction, but now the definitions preferred by WHO is "any chemical substance, which when taken regularly develops irresistible desire to procure and take, tends to progressive increase in dose, develops physical and mental dependence showing withdrawal symptoms and causes physical and moral degradation.

AIMS

- To introduce about some basic drugs which are used to alter the physical and mental status.
- To know about various drugs which are used as psychoactive drug.

OBJECTIVE

- To aware the people about bad results of the drugs abuse & Addiction.

There are four pattern of drug abuse.^[2,3,4,5]

- Acute intoxication

- Substance dependence
- Harmful use
- Withdrawal state

Acute Intoxication

Acute intoxication is a transient conditions following the administration of alcohol or other psychoactive substance resulting in disturbances in the level of consciousness cognition, perception, affect or behaviour or other psycho physiological functions and responses.

Substance Dependence

Substance dependence is a cluster of physiological behavioural and cognitive phenomenon in which the use of a substance or a class of substances taken on a much higher priority for a given individuals than other behaviors that once had greater value.

Withdrawal State

It is characterised by a group of symptoms often specific to the drug used which develop on total or partial withdrawal of a drug, usually often repeated and/ or high dose use, the duration usually is of few hours to a few days.

Harmful Use

Harmful use is characterised by continued drug use despite awareness of harmful medical and / or social effects of drug being used and a pattern of physical hazardous use of drug.

Classification of Abusing Drugs^[6]**Stimulants** – Nicotine, Amphetamine, Cocain, Caffeine.

Sedative/ Narcotics – Morphine, Codein, Heroin, Alcohol, Barbiturates, Diazepam, Methadone, Methaqualone, Chloral Hydrate.

Antipsychotic Agents – Reserpine, lithium, Nortriptyline, Amitryptillin etc.

Hallucinogenic – Cannabis, Mescaline, L.S.D (Lisergic acid diethylamine)

Pain Killer – Pentazocain. Ketorolac etc.

Table 1: Difference Between Drug Addiction And Drug Habituation.^[7]

Trait	Drug addiction	Drug habituation
• Compulsion	Present.	Desire but no compulsion.
• Dose	Tendency to increase.	No tendency to increase.
• Dependence	Psychological and physical.	Some degree of psychological but not physical.
• Withdrawal symptoms	Characteristic symptoms.	None or mild.
• Harm	Both to the individual and society.	If any, primarily to individual.

Drug Which Causes Only Psychological Dependence^[8]

- Amphetamine
- Cannabis
- Cocaine
- Caffeine
- Lysergic acid diethylamine
- Mescaline
- Tobacco

Drugs Which Causes Both Psychological And Physical Dependence^[9]

- Alcohol
- Diazepam
- Codein
- Methadone
- Methaqualone
- Barbiturate
- Heroin
- Pethidine
- Chlodiazepoxide
- Meprobamate

Dsm-Iv Criteria for Diagnosis of Substance Dependence^[10]

- It is based on the presence of at least three symptoms occurring at anytime in a 12 month period
- Tolerance
- Withdrawal
- Administration of large doses or over longer periods than originally intended
- Decreased control over usage
- Increased time investment in acquisition use or recovery from substance
- Decreased participation in occupational recreation or social events
- Continued use despite social, psychological or physical problems caused by the substance.

The recent DSM IV criteria has eliminated the need for withdrawal and tolerance as criteria to make a diagnosis of substance abuse disorder as opposed to substance dependence disorders.

The Criteria For Diagnosis Of Substance Abuse Disorder Are^[11]

- Hazardous or compulsive use
- The role of impairment
- The recurrent legal problems

General Symptoms of A Drug Addict, Which May Draw Attention Of The People Around^[12]

1. Over excitement
2. Behavioral changes
3. Rude and arrogant behaviour
4. Red eyes- which an addict may try to hide by using cloudy goggles
5. Regular late return to home
6. Influx at new friends
7. Demand for extra pocket money
8. Nausea/ loss of weight/ anorexix, sleeplessness
9. Lack of concentration/ prior results
10. Tremor
11. Lack of personal hygiene
12. Argumentativeness
13. In case of female –irregularities of period
14. Withdrawal symptoms etc

Individual drugs

Opiate

Heroin^[13]

It is a semisynthetic product of morphine, which is an alkaloid of opium. It was first synthesized in 1874 and first commercialised in 1898 as a pain killer. However due to its side effects its legal use is now totally banned all over the world. It is said that once it is taken, it is taken for ever. Continue use of it may produce some effects on the body like pupil contraction, congested bulbar conjunctiva, CNS depression, slowing of physical activities, slurry speech, dry mouth, dry skin with pale brittle nails, itching of skin, exyreme thirst, sleepy and drowsy appearance etc.

Withdrawal symptoms includes psychological discomfort than physical within 4-6 hours. Addict may experience restlessness, running nose and eyes within 8-14 hours. In 14 -24 hours, the symptoms will increases

with loss of appetite, body tremor etc. these are the symptoms of first stage.

In stage II within 24 – 36 hours, addicted person will begin to have insomnia, vomiting, diarrhoea, weakness and depression.

In stage III within 48-72 hours, symptoms will reach peak with severe muscular and stomach cramp. Rise in temperature and respiration, the addict may complain of nervousness, weakness and insomnia.

Treatment can be divided into various types, Narcotic antagonists eg naloxone and Naltrexone are used in case of overdose of drug. Detoxification procedures are used in the west to recover from the withdrawal symptoms eg; Methadone. Other drugs which provides an alternative to methadone are levo alpha acetyl methadol (LAAM), propoxyphene, Diphenoxylate, lofixidine etc.

COCAINE^[14,15]

It is an alkaloid obtained by extraction from leaves of the plant erythroxyllone coca, initially grown in south America- now almost at all places around 1000- 2000 feet altitude and temperature between 20-30 °C having clayey soil rich in iron. Pure cocaine alkaloid is called crack. Cocaine use produces a mild physical, but strong psychic dependence. In early phase, there is anorexia, depression, fatigue, agitation, hypersomnia which is followed by normal mood, anxiety and anhedonia. In third phase there are no withdrawal symptoms, but increased vulnerability to relapse. In case of poisoning Bromocriptine and amantadine are useful in reducing cocaine craving. Gabapentine is being used in adult addict.

CANNABIS^[16,17]

The plant is *Cannabis sativa* or *Indica*. In India it grows in abundance both in Himalayan, Sub Himalayan region and the plains. The term marihuana or marijuana (grass, tea, Mary Jane) is used in America to refers to cannabis. It is Mexican term meaning “pleasurable feeling”. The flowery top of female plants yields Ganja (Marhijuana), dried leaves and stock yields Bhang and the resinous exudate from the plant yields Charas (Hashish).

1. BHANG

It is also known as *siddhi*, *sabji*, and *patti*. It is prepared from the dried leaves and fruit shoot which are used as an infusion in the form of a beverage. It contains the active principle in a concentration of 15% and is the least potent.

2. MAJUN

This is a sweetmeat made with bhang. It produces grandiose delusions, in addition to all the effects of bhang.

3. GANJA

This consist of the flowering tops of the female plant, specially grown so that there is a large amount of resinous exudate. It contains the active principle in a concentration of about 25%. The resin has a rusty green colour and characteristics odour. It is mixed with tobacco and smoked in a pipe.

4. CHARAS

Also known as hashish and is the most potent of all the cannabis preparations, containing the active principle in a concentration varying between 25 to 40 %. it is the resinous exudate from the leaves and stems of the plant. It is dark green and brown colour. It is smoked with tobacco in the pipe or hookah.

Cannabis produces a mild physical dependence and withdrawal syndrome. The syndrome begins within few hours of stopping cannabis use and lasts for 4- 5 days. It initially stimulates then depresses the Central Nervous system. Acute intoxication can be characterised by hallucination, feeling of lightness, increase in appetite etc. Chronic user may experience irritability, malaise, agitation, insomnia, tremor, nausea, depression, sweating and bodyache.

The minimum lethal dose of charas is about 2.0 gm, of ganja about 8.0 gm, and of bhang about 10.0 gm per kg body weight. Death may occur in about 12 hours in acute poisoning. Treatment consists in washing out the stomach with warm water, hypodermic injection of strychnine, strong tea or coffee by mouth or per rectum, artificial respiration is given if needed.

L.S.D. (Lisergic acid Diethylamine)^[18,19,20]

The most potent and widely used hallucinogenic drug, a semisynthesised alkaloid extracted from fungus grown on rye, and is rapidly absorbed from the GIT with onset of action in 30-40 minutes. It is tasteless, odourless, having a powerful effect in minute doses. It is available in the form of clear liquid, thin squares of gelatin window panes, and pills of varying colours. It is usually taken as sugar cube or by putting a drop on blotter paper and licking it when the drug effect is desired. Mydriasis, hippus vertigo, impaired ability to concentrate, alter time sense and many of these persons get supreme relaxation as well as happy feeling. Treatment includes removing the patient from aggravating situations and symptomatic treatment.

complications of drug abuse^[20]

The different routes of intake may produce different physical lesion. By taking orally may produces malnutrition and dental decay. The peripheral veins in the arms, hands, legs and sometimes abdomen, groin or neck are damaged, overuse of the some veins produces thrombosis and phlebitis, and pulmonary embolism. The veins become dark in colour hard and may ulcerate. When healed, there may be white or silvery linear scars in the axis at the limb. Intra- arterials injection may cause

vascular damage and gangrene. Cellulitis and skin abscess formation at the injection site. Septicaemia and subacute bacterial endocarditis may develop, fat atrophy and necrosis may be seen. Other complications includes, pulmonary tuberculosis, pneumothorax, accidents from traffic, death from poisoning can occur from the effects of the drugs or from contaminant, such as strychnine which are used to dilute the drugs.

Post-mortem Finding^[21,22,23]

External

Clothes may contain drugs, pockets, chilam, needle-syringes/ tourniquet etc. There are often signs of wasting of the body, froth may be seen at the mouth and nose. The regional lymph nodes may be enlarged. Punctate areas of black discoloration {soot tattooing} are caused by deposition of carbonaceous materials along the track of the needle. Such tattooing is called turkey skin. The body may be tattooed to hide the scars. There may be fresh multiple damage to the skin may be seen, including skin infection. Inflammation may be present to the recent injection site. nasal septum ulceration & perforation may be noted in chronic snorting abuser.

Internal

There may be phlebitis, phlebosclerosis, thrombosis & perivenous haemorrhage. The vein and surrounding tissue should be preserved for chemical analysis. Typical visceral finding includes non specific triad of edema, pericaudal pleural & peritoneal effusions may be found. Pills or capsules may be present in the gastrointestinal track. The liver may be slightly enlarged or show evidence of cirrhosis. Splenomegaly and portal lymph nodes hyperplasia are the common. The most constant finding in both spleen and portal lymph nodes is the presence of large germinal centers, petechial haemorrhage may be seen in pleura and lungs are congested and adematous. Heart may show vulvular disease. In brain edema and focal areas are necrosed, involving the globus pallidus & hippocampus due to hypoxia, pulmonary edema, tuberculosis may be present.

Chemical Analysis^[24]

Nasal secretions are useful for cocaine, opiates and drugs which are inhaled or snorted. blood should be obtained from a peripheral site, preferably femoral vein, preserved by sodium fluoride and stored at 4 °C. the stomach contents, liver, kidneys, lungs, bile, blood vessels, blood and urine, and injection site should be sent for chemical analysis. The samples of choice are blood and urine, although nasal secretions, gastric contents, bile, liver, kidneys and lungs may be necessary to definitely identify the type and concentration of drug. If the drug is taken by nasal route, dry swabs from each nostril should be taken. Tissue removed from injection mark should be refrigerated, till it is delivered to the laboratory. Common methods for detecting drugs of abuse are gas-liquid chromatography (GLC), Thin layer chromatography (TLC) and spectrophotofluorimetry (SPF).

Medical Aspects^[25]

- In drug addicts skin popping, multiple old and new subcutaneous puncture marks on forearm may be seen.
- A drug addict may be killed by other person by rapid IV injection of drug – Hot shot or Speed ball. Heroin & Cocaine is also called speed ball.
- Due to repeated IV injection of drug prominent veins, known as main line may be seen.
- The dose leads to kick or rush.
- Drugs in packets or condoms called drug stuffing/ drug bagging/ body packing.
- Cocaine, Heroin, opium are labelled as Hard drugs while amphetamine, barbiturates and cannabis etc are labelled soft drugs.

DISCUSSION

Due to increasing complexities of life and varieties of drug being available. The drug are being used due to group pressure and for pleasure. It is also used to forget worries, to feel some unique experience, to enhance performance, to control anger or distress. These people who took drugs to have a kick or to escape from the realities of life become addict. There are some at the causes of drug addiction. Which includes abnormal mental condition, negligence by parents, lack of peaceful atmosphere at home, frustration in life, curiosity, physical inability to do a job. Addicted person exhibit irritability, psychosis, depression, hallucination, delusions, poor interpersonal relations with family members and others, discontinuation of studies, occupational impairment etc.

CONCLUSION

The best treatment for such a condition is the total deprivation of the drug from the patient. This can be only achieved with great moral control over one's mind which is not possible in addicted person. Addicted persons should visit the hospital or de-addiction centres. The person should be removed to an institution, so as to remove him from the association with which the addiction started. Constant supervision to prevent addict from obtaining secret supplies of the drug. Detoxification consists of reduction in dosage of drug over a period of one to 3 weeks. Diverting the mind by engaging him physically and mentally in some occupation. Psychotherapy should be given to the addicted person.

In these persons sudden withdrawal produces some different symptoms like tremors, running of nose & eyes, loss of appetite, nausea, vomiting, diarrhea, restlessness, muscular cramps, dehydration, weight loss etc.

REFERENCES

1. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 473.

2. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 629.
3. Professor S.K.Singhal, Singhal's Toxicology, Published by The National Book Deport, 8th edition, 2012; 142.
4. Rajesh Bardale, Principles of Forensic Medicine and Toxicology, jaypee Brothers Medical Publisers (P) LTD, 1st edition, 549.
5. Dr. K.S. Narayan Reddy, , Dr. O.P.Murty, The essential of Forensic Medicine & Toxicology, Jaypee The Health Sciences publishers, thirtythird edition, Chapter 33 Drug Dependence and Abuse, 563.
6. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 473.
7. Dr. K.S. Narayan Reddy, , Dr. O.P.Murty, The essential of Forensic Medicine & Toxicology, Jaypee The Health Sciences publishers, thirtythird edition, Chapter 33 Drug Dependence and Abuse, 563.
8. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 473.
9. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 473.
10. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 630.
11. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 630.
12. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 474.
13. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 474.
14. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 631.
15. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 475.
16. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 631.
17. Prof. CK Parikh, Parikh's Textbook of Medical jurisprudence, Forensic medicine and Toxicology, editor BV Subrahmanyam, CBS Publishers & Distributors Pvt Ltd, 8th edition, 663-664-665.
18. Prof. Rabindra Basu, Fundamentals of Forensic Medicine and Toxicology, published by Arunabha Sen, Books & Allied (p) LTD. 2nd edition, 475.
19. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 632-633.
20. Prof. CK Parikh, Parikh's Textbook of Medical jurisprudence, Forensic medicine and Toxicology, editor BV Subrahmanyam, CBS Publishers & Distributors Pvt Ltd, 8th edition, 699.
21. Rajesh Bardale, Principles of Forensic Medicine and Toxicology, jaypee Brothers Medical Publisers (P) LTD, 1st edition, Page no. 550.
22. Professor Gautam Biswas, Review of Forensic Medicine and Toxicology, publish by jaypee Brothers Medical Publishers, 4th edition, 2019; 634.
23. Prof. CK Parikh, Parikh's Textbook of Medical jurisprudence, Forensic medicine and Toxicology, editor BV Subrahmanyam, CBS Publishers & Distributors Pvt Ltd, 8th edition, 625.
24. Dr. K.S. Narayan Reddy, , Dr. O.P.Murty, The essential of Forensic Medicine & Toxicology, Jaypee The Health Sciences publishers, thirtythird edition, Chapter 33 Drug Dependence and Abuse, 563.
25. Professor S.K.Singhal, Singhal's Toxicology, Published by The National Book Deport, 8th edition, 2012; 143.