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IP International Journal of Comprehensive and Advanced Pharmacology

Journal homepage: www.ipinnovative.com

Review Article

Effect of illicit drugs on dental health- A review

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ARTICLE INFO

Article history:
Received 24-08-2020
Accepted 07-09-2020
Available online 24-10-2020

Keywords:
Illicit drugs
Heroine
Cannabis
Marijuana
Meth
Codeine

ABSTRACT

Oral side effects associated with drug use are well established, with aggressive caries, periodontitis, bruxism, poor oral hygiene and general neglect documented. Another factor such as high-cariogenic diet and lifestyle, social and psychological factors of poor oral health compounds in illicit drug users. Literature has shown that health-related quality of life in the mouth among injecting drug users is poor compared with the general population of Australia and the quality of life of addiction correlated with caries experience. Thus, the role of the dentist is very important in managing the oral health of individuals. Given their extensive recreational use, there is a possibility that dental practitioners will encounter patients who are regular users or past forbidden drugs. In this article we will tell about the effect of various drugs.

1. Introduction

Illicit drugs are characterized as 'drugs for which non-clinical use has been precluded by global medication medicine treaties because they introduce unsatisfactory dangers of dependence on users.[1] Illicit drugs are the drugs which are profoundly addictive and unlawful substances, for example, heroin, cannabis and meth. While the choice to utilize one of these medications just because is typically a deliberate one, a sudden enslavement can settle on the choice to stop later fundamentally harder.

Current society is tormented with the issue of illicit sedate use alongside the all-around perceived issue of utilization of licit drugs with 4.9% of the world's 15–63 year olds having utilized illicit drugs in the previous a year (United Countries Office on Drugs and Crime, 2008).[2] About 4.7% of the Indian populace was found to have utilized illicit drugs sooner or later with cannabis and narcotics being ordinarily utilized. The utilization of cocaine and amphetamines isn't normal among illicit medication clients in India (Ray, 2004).[3] A people group-based overview found that the commonness of cannabis and narcotics utilize was 0.3 and 0.4% individually among Delhi guys with the most noteworthy rates found in resettlement bunches (Mohan et al., 2001).[4] Illicit drug use, which includes injecting drug use, cocaine, opioid, amphetamine and cannabis reliance, added to 1.8% of the total sickness trouble in Australia in 2011.[3] Illicit drug use is likewise related with other physical and mental damages, for example, for example, overdose, self-hurt, mental issues and blood-borne bacterial and viral diseases just as other social and monetary expenses including brutality, wrongdoing and family disruptions.[1,5]

1.1. There are various types of illicit drugs

1.1.1. Cocaine

Cocaine is an intensely addictive energizer produced using the leaves of the South American coca plant, and typically arrives in a powder structure. Road names for cocaine

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https://doi.org/10.18231/j.ijcaap.2020.023

incorporate blow, knock, coke, and day off. Cocaine is most usually grunted or infused, and can likewise be smoked or controlled to the skin.[6]

1.1.2. Crack cocaine

Split is the more unadulterated and intense type of cocaine, which ordinarily comes in strong squares or precious stones. Rocks is ordinarily smoked, permitting it to arrive at the cerebrum all the more rapidly and result in a brief – yet extreme – high. It is likewise progressively regularly infused.[7]

1.1.3. Ecstasy

Used by some high-schoolers and youthful grown-ups, rapture is viewed as a gathering drug or rave drug. Its psychoactive impacts incorporate improved tangible observation and can cause brought down hindrance. Joy is most regularly taken orally in pill structure or broke up in water, yet can likewise be grunted or infused.[8]

1.1.4. Hallucinogens

LSD, PCP, mushrooms and salvia are for the most part instances of psychoactive or brain adjusting drugs. While a dependence on this kind of drug is more uncommon than different drugs, use and abuse of these substances can cause extreme negative reactions.[9]

1.1.5. Heroin

Heroin is an amazingly addictive substance that is artificially gotten from the opium poppy plant. It comes as white of earthy powder, or as a dark and clingy substance known as "dark tar." Heroin is most regularly infused, however it can likewise be grunted, smoked, or devoured orally.[10]

1.1.6. Inhalants

Inhalants incorporate household things, for example, splash paints, markers and cleaning supplies which are breathed in through the mouth or nose so as to accomplish a high. Breathing in particular kinds of these substances can prompt cardiovascular breakdown, bringing about death.[11]

1.1.7. Ketamine

This substance is therapeutically used as a sedative in veterinary practice. At the point when abused, ketamine can cause mental trips, sedation and disarray (12).

1.1.8. Marijuana

Maryjane is one of the most generally abused illicit substances. The fundamental psychoactive fixing, THC, causes brief elation followed by laziness, eased back response time and expanded craving.[12]

1.1.9. Meth

Meth is an incredibly hazardous energizer that can cause users to turn out to be in a flash dependent. The momentary impacts of meth incorporate sharpness and happiness. In any case, long haul use of meth can prompt issues, for example, vicious conduct, extreme dental issues, psychosis, and serious neurosis.[13]

1.1.10. Engineered Marijuana

Engineered cannabis alludes to the developing number of fabricated substances that contain a compound like THC. Albeit engineered pot is promoted as a lawful other option, the substance's belongings can be capricious and more extreme than its regular partner.[14]

1.2. Cannabis

Cannabis, the most widely used recreational drug Worldwide[15] is taken from the cannabis sativa plant.[16–18] The plant contains more than 60 cannabinoids, of which delta-9-tetrahydrocannabinol (THC) is the most common and most common responsible for psychoactive effects.[16] Thirty-five Percentage of Australian population aged 14 and overreported using cannabis at least in their lifetime once and 10.4% had used cannabis in 2015.According to their own information, cannabis use is responsible for 0.2% of the burden of disease in Australia. Marijuana, hashish, and hash oil are the top threeForms of recreational cannabis.10 Marijuana generally consists of dried flower tips and leaves contains between 0.5 and 5% THC and is made as Joint" to smoke.[16,17] It usually contains hashish. about 2-20% THC and consists of the flower Heads compressed with resin[17,18,20) is hash oil Made with hashish and is the most concentrated composed of 15 to 50% THC. As long as there is different forms of administration, marijuana is the most usually given by smoking, often in a hand-rolled, unfiltered cigarette or through a water pipe, Cannabis known as the "bang". The hash can be contained in foods such as cookies because it is soluble in fat and alcohol.[19]

Recreational cannabis use has negative effects on most body systems, where it is estimated that about 12-15% of recreational users will become chronic users[19,20] Contains anxiolytics, sedatives, analgesics properties, stimulates appetite and produces euphoria which is mainly responsible for its recreational use and encompasses a feeling of anxiety, alertness and reduced tension.[19] However, this can also generate negative reactions, such as anxiety, panic and paranoia.[19] Other psychological effects include impaired psychomotor performance and slowing down reaction time, increased risk of accident, difficulty in concentration and an increased risk of psychiatric disorders.[19,21] THC also affects the cardiovascular system as it is associated with mild tachycardia hypertension, systemic and posterior vasodilation cardiac ischemia in susceptible patients.[22]

1.2.1. Oral implications and dental management

It established that smoking marijuana is associated with xerostomia and because of the increased risk caries,[23] with a higher user has decayed, missingand filled teeth score compared with non-users.10 A study aimed to determine the effects of marijuana Smoking in the soft tissues of the mouth showed that 69.6% of xerostomia user experience soon after the administration cannabis.[24] A further study assess the oral health of cannabis users in Switzerland show that cannabis users had significantly a higher amount of decay, more smooth surface caries, a lower frequency of daily oral hygiene, higher consumption of beverages cariogenic and less frequent regular dental attendance compared with controlstest group.[25] Interestingly, the clinical purified CBD products 'Epidolex' showed that saliva and salivary hypersecretion common adverse oral effects.[26] Oral soft tissue changes have been documented, with an increased incidence in marijuana and tobacco leukoedema smokers.[25] same study reported the increasing prevalence of candidosis in users compared with non-users and postulated that it was a possibility the combination of poor denture hygiene, unsatisfactory nutritional factors and the use of marijuana contribute for the observed manifestations of candidosis.[25] A a review of the effects of oral cannabis users concluded that the increased prevalence of recreational marijuana use was associated with xerostomia, leukoedema and the increased prevalence and density of Candida albicans.[24] Smoking marijuana is also associated with increased risk of cancer of the mouth, such as hashish and marijuana smoke contains many carcinogens, including phenol, vinyl chloride and aromatic hydrocarbons and others.

1.3. Methamphetamine

Amphetamines classified as a psychostimulant drug, with the mode of action is thought to involve increased dopaminergic and noradrenergic neurotransmission in Amphetamines were registered for treatment CNS.[25] used in Australia including methylphenidate, dexamphetamine and lisdexamphetamine, used to treat narcolepsy and attention deficit hyperactivity disorder.[25] Methamphetamine ('crystal', 'speed' or 'ice') is amphetamines illegally produced and most abused and widely distributed illegally form of amphetamine,[27] because it is relatively cheap to produce and acquire[26] and have a relatively long duration action compared with other illicit drugs such as cocaine.[28,29]

1.3.1. Oral implications and dental management

people have articulated the appearance of their teeth as "blackened, stained, rotting, crumbling or falling apart[27] with Hamamoto et al.[25] describe a typical location caries in chronic users generally involve the buccal cervical and smooth surfaces of teeth and interproximal surfaces of anterior teeth. Caries development tends to undergo a period of arrest and progression.

There are several reasons for the increase damage. Especially methamphetamine cause xerostomia as the direct action of the drug because of sympathetic stimulation of adrenergic receptors causes reduction and reduced salivary flow[30–33] buffer ability. other factors contributing to rampant caries development including long duration of action MA equate with negative effects long-lasting drug, oral hygiene is not enough and dehydration because hyperactivity. Furthermore, two Prospective studies have shown that the Supreme Court has significantly increase the intake of soft drinks containing sugars and poor oral hygiene compared with the general population.[34,35]

1.4. Cocaine

Cocaine is a natural alkaloid with local anesthetic and psychoactive properties derived from the leaves of the coca bush Erythroxylon, a plant native to several countries in the South America[36–38] In the 1880s, cocaine was used as a local anesthetic for the eyes and otolaryngological surgeries[37,38] and cocaine drops are still used today for topical anesthetic in eye, ear, nose and throat procedures.

Usually given intranasally by the 'grunt', pure cocaine is usually diluted by drug dealers with other substances such as mannitol, lactose, talc, caffeine, quinidine to increase their profits and chemical irritants make the product more dangerous for the cocaine user[38] can also be smoked , by converting cocaine 'Cracks', where it turns into a free base with mix it with ingredients such as sodium bicarbonate,free form the basis of highly addictive then heated and smoked, in which the 'crack' name comes from the popping sound made at heating.[39] When cocaine snorting, time to peak effect is a few minutes after inhalation, taking place between 20-90 min and has a relatively short half-life of 1.5 hours compared to MA.

Cocaine is readily absorbed across the mucous membranes and have both local anesthetic properties by binding to the sodium channel, as well as a sympathomimetic properties by enhancing dopaminergic and noradrenergic neurotransmission in CNS.46 Securities cocaine euphoria is due to blocking the re-uptake and therefore subsequently increase dopamine levels.[40] Other effects from increased levels of neurotransmitters including dizziness, blurred vision, delirium, aggressive behavior and increased respiration rate.[37] Neurological degeneration has also been noted by chronic cocaine abuse, including deficits in cognition, attention deficits, emotional instability and depression[41] due to an increase in the sympathetic nervous system stimulation, other complications because it included hypertension and cardiac arrhythmias but also narrowing coronary arteries, thereby putting patients at risk of angina, hypertension and acute myocardial infarction.[37]

1.4.1. Oral implications and dental management

Bruxism and temporomandibular joint discomfort and pain in the muscles around it are well-documented orofacial manifestations of cocaine use, the possibility of due to changes in dopaminergic neurotransmission.[42–44] attrition and erosion of tooth enamel and dentin is also a common finding, due to both grinding increase and a decrease in salivary pH caused by cocaine[45] pure cocaine (cocaine hydrochloride) has a pH of 4.5 is capable of the disintegration of the enamel and dentin when ingested either by direct placement in the oral cavity or with Cocaine is often placed nose administration[46] directly into the gingiva by the user to test the quality and the purity cocaine.[47]

Oronasal perforations are again attributable to the vasoconstrictive actions of cocaine, resulting in reduced blood flow and subsequent ischaemia and necrosis of the orofacial tissues.[45] Dental treatment should be postponed for a minimum of 6-24 hours after the last administration Users cocaine.[48] Governance such as hypnotics often diazepam and zolpidem for the transition from euphoria. The influence of cocaine. It is well established that drugs also cause xerostomia, further compounding the risk of caries, oral infections and noncarious wear.

1.5. OPIOIDS

Heroin, also known as diethylmorphine, is a semi-synthetic opioid derived from morphine and together with pharmaceutical opioid abuse, contributing to the largest proportion of the global burden of disease of all drugs.[49,50] This forbidden due to the high morbidity and mortality correlated with the injected use of heroin including endocarditis and hepatitis, but also another danger associated include overdose, spread of blood borne viruses and brand-related crime.Heroin use a serious public health problem.[51] Heroin is the most common opioid use among people injecting drugs,[52] with a heroin addiction that affects nearly seven in 1000 adults in Australia.

1.5.1. Oral implications and dental management

heroin addiction is associated with xerostomia accompanied with hypoglycemia,[53] and the use of opioids chronically cause altered taste preferences of modulation of kappa and mu receptors which may be the reason why the cariogenic foods high user preference and beverages.[54,55] Location caries the lesion has been described to be prevalent in the buccal, cervical and smooth surface and is often present prior to the start of methadone use[56,57] given daily methadone syrup under the supervision of a pharmacist, which often sweetened with friendly for palatability, the latter of which may potentially contribute to the development of a study caries. oral health in patients on methadone program shows the user have worse oral health than non-users, the increased presence of residues roots, less often present teeth, xerostomia and increased prevalence of psychological problems accompanied by anxiety and other reports fear.[58,59] have documented the rapid tooth decay with aggressive activity, extensive caries in patients with methadone maintenance therapy.

2. Conclusion

Illicit drug used is a significant public health problem, with dentists likely to encounter current and past users of various illicit drugs, underscoring the need for dentists to be aware of the oral implications associated with substance use disorder. Concomitant factors such as poly-drug use, including the use of alcohol and tobacco, as well as psychological, behavioural and social issues, compound the oral health of addicted persons and complicate dental management. The dentist is an indispensable member of the multidisciplinary team, since oral adverse effects are commonly associated with illicit drug use and are associated with a poorer quality of life for these individuals. Dentists should be aware of the rising misuse and diversion of pharmaceutical drugs and prescribe judiciously for a true therapeutic need with minimal quantities.

3. Source of Funding

None.

4. Conflict of Interest

None.

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Cite this article: Hassan SA, Bhateja S, Arora G, Prathyusha F. **Effect of illicit drugs on dental health- A review**. *IP Int J Comprehensive Adv Pharmacol* 2020;5(3):105-109.