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A Study to assess the association between Drug Abuse and Stroke among clients from selected psychiatric institutions in Kerala.

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Introduction

Although it is sometimes seen as a uniquely contemporary issue, the usage of drugs for their psychoactive effects extends back thousands of years. Drugs originating from plant use have the oldest history of abuse. Abuse of synthetic and semi-synthetic pharmaceuticals dates back to the early twentieth century, when these chemicals were developed pharmaceutically. Opiates, stimulants (cocaine, amphetamine, and related compounds), hallucinogens (LSD, phencyclidine, etc.), marijuana, barbiturates and other sedatives, and inhalants are the most often abused drug groups. This essay will not address the two most often abused substances, alcohol and tobacco. This should not be interpreted as reducing their addictive potential or obvious influence on stroke risk. Each of the major groups of drugs of abuse creates a specific clinical intoxication and is linked to a narrow range of cerebrovascular illness. Understanding these patterns is critical in the assessment and management of stroke victims. Any discussion of illegal substances raises a number of issues. To begin, many substances have a range of popular street names. Because there are no conventional meanings for these phrases, they may signify various things to different individuals at times. Second, since most drugs of abuse are illegal, patients' perceptions of the substance taken must be regarded as having limited trustworthiness. Compounds that have been tainted or substituted are widespread, and only toxicological confirmation or direct testing of the material itself may validate the real identification of the consumed medicine. Finally, numerous methods of administering specific medications exist, and the effects of the drug, both desirable and unwanted, vary significantly as a result.

Factors influencing drug use include those affecting the demand, supply, and actual usage of a certain set of substances. Previously, epidemiological research did not identify drug addiction as a cause of stroke, and the majority of evidence showing illicit substances are risk factors for stroke was anecdotal.



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The first case of cocaine-related stroke was reported in 1977, when intramuscular injection in a male user was followed by aphasia and right sided hemiparesis 1 hour later. The case-control research published in 1999 proved that drug usage is a risk factor (47%) for hemorrhagic and ischemic stroke in young people. A recent research found a robust link between acute cocaine use and early-onset ischemic stroke, with an odds ratio of 6.4. According to the Baltimore-Washington Young Stroke Study, 12.1% of young stroke victims reported recent drug use, and in 4.7% of cases, it was the single cause of stroke.

Strokes are more common in males than in women between the ages of 35 and 44. Cocaine is the most common recreational substance causing stroke in Western data (57%), followed by heroin, amphetamine, methylphenidate, and phencyclidine.Cannabis, heroin, and prescription medications manufactured in India are the most commonly misused narcotics in India. By the ninth grade, almost half of all males had used at least one drug of abuse character. In an Indian research, 10% of individuals with acute ischemic stroke were found to be abusing illegal drugs. In another research, in addition to other risk factors (regular cigarette user 38%, current smoking 34%, current drinking 42%), illicit substance misuse was identified in 8% of young participants with severe hemorrhagic stroke. A large population-based research of 1935 stroke patients found that drug usage was related with 14.4% of intracerebral haemorrhages and 14.4% of ischemic stroke. Some medicines are associated with specific stroke subtypes. For example, heroin is most often connected to cerebral ischemia and has very rarely been linked to subarachnoid or intracerebral haemorrhage. Amphetamine increased the risk of hemorrhagic stroke (4.95 times) in a cross-sectional analysis of hospital discharges, while cocaine increased the risk of both hemorrhagic stroke (2.33 times) and ischemic stroke (2.33 times) (2.03 times). In certain developing nations, especially those that generate drugs, the etiological attributable percentage of illegal drug use for stroke in the young may be substantially greater. For example, 45.7% of stroke victims in Iran were addicted to opium.Approximately 25% of these individuals die during their first hospitalisation, and many of those who survive have long-term neurologic disabilities.Fifty-six (26%) stroke patients died during the acute hospitalisation; (86%) experienced hemorrhagic strokes (16 subarachnoid haemorrhage, intracerebral haemorrhage). Amphetamine misuse is linked to an increased risk of mortality after a hemorrhagic stroke. In cocaine addicts, intracerebral bleeding may occur in the lobar or basal ganglia.

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Methodology

Investigator assessed the secular trends in drug addiction and strokes from January 1, 2016, to December 31, 2017, using a cross-sectional methodology and a quality indicators' database of 2000 discharges from selected psychiatric institutions in Kerala. Researcher created separate logistic regression models of risk variables for hemorrhagic (n = 800) and ischemic (n = 726) stroke discharges among people aged 20 to 45 in 2016, as well as death risk in stroke patients. Tools used were demographic profroma, Clinical Proforma and modified Rankin Scale.

Results

3,4-Methylenedioxymethamphetamine were found to be the second most often abused substance among psychiatric hospital patients, behind alcohol, while cocaine was the fifth most frequently misused drug. While the misuse of alcohol and hallucinogens did not rise during the five years, the abuse of cocaine, cannabis, opiates, and 3,4-Methylenedioxymethamphetamine did. The rate of rise for 3,4-Methylenedioxymethamphetamine was the fastest of these.

The rate of rise in 3,4-Methylenedioxymethamphetamine misuse was the highest between 2016 and 2017, followed by cannabis and cocaine. Strokes were also on the rise, especially among amphetamine addicts. In 2000 discharges from 2016 to 2017, amphetamine usage was linked with hemorrhagic stroke but not ischemic stroke; MDMA abuse was associated with both hemorrhagic (OR, 11.12; 95% CI, 11.71-13.62) and ischemic (OR, 12.04; 95% CI, 11.41-12.80) stroke. Abuse of 3,4-Methylenedioxymethamphetamine, but not cocaine, was linked to an increased risk of mortality following a hemorrhagic stroke (OR, 3.62; 95% CI, 4.04-6.53).

From 2016 to 2017, multivariate logistic regression models revealed distinct patterns of relationship with hemorrhagic and ischemic stroke. Abuse of 3,4-Methylenedioxymethamphetamine was substantially linked to hemorrhagic

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stroke but not ischemic stroke. Its connection with hemorrhagic stroke was stronger than cocaine or cigarette use, but weaker than cerebrovascular abnormalities, intracranial tumours, and hypertension. The logistic regression models were not substantially influenced by medication combinations. In previous research, alcohol misuse was linked to hemorrhagic stroke, and it trended toward significance in our model. In univariate analysis, atrial fibrillation or flutter was a substantial risk factor for ischemic stroke, but it did not stay significant in the multivariate model due to severe collinearity with the "miscellaneous cardiac" variable (malignant neoplasm of the heart, acquired mural thrombus following myocardial infarction, heart valve disorder, prosthetic heart valve, and atrial septal defect).

Conclusion

We discovered that 3,4-Methylenedioxymethamphetamine misuse was related with double the incidence of hemorrhagic stroke as cocaine addiction after controlling for other risk variables. In contrast. 3.4-Methylenedioxymethamphetamine misuse was not related with an elevated risk of ischemic stroke, although cocaine addiction was. Amphetamine usage, but not cocaine use, was linked to an increased risk of mortality after a hemorrhagic stroke. The public health implications of these results are heightened by reports of a recent surge in 3,4-Methylenedioxymethamphetamine misuse, notably in southwestern, western, and midwestern areas. This concern was bolstered by our discovery that, among hospitalised patients in Kerala from 2016 to 2017, the rate of 3,4-Methylenedioxymethamphetamine abuse increased faster than any other including drug. cocaine, and the of strokes among 3.4rate Methylenedioxymethamphetamine abusers increased faster than the rate of strokes among any other drug abusers.

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