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**Dr. Shreemnata Kumar Dash**  
Professor & Head, Department  
of Forensic Medicine &  
otoxicology, All India Institute  
of Medical Sciences,  
Mangalagiri, Andhra Pradesh,  
India

**Dr. Bedanta Sarma**  
Assistant Professor,  
Department of Forensic  
Medicine & Toxicology, All  
India Institute of Medical  
Sciences, Mangalagiri, Andhra  
Pradesh, India

**Dr. Senthil Kumaran M**  
Associate Professor,  
Department of Forensic  
Medicine & Toxicology, All  
India Institute of Medical  
Sciences, Mangalagiri, Andhra  
Pradesh, India

**Corresponding Author:**  
**Dr. Senthil Kumaran M**  
Associate Professor,  
Department of Forensic  
Medicine & Toxicology, All  
India Institute of Medical  
Sciences, Mangalagiri, Andhra  
Pradesh, India

## Substance abuse: Through forensic lens

**Dr. Shreemnata Kumar Dash, Dr. Bedanta Sarma and Dr. Senthil Kumaran M**

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### Abstract

Abuse of substance is increasing among youngsters since last few years, so as the crime rate. There are many factors responsible for the rapid raise of this problem. In spite of government regulations, it has not been decreasing. In each and every corner of Indian states, although law enforcement officers are taking strict action to control the drug trafficking and paddling, there are some linking chains which are yet to be cut. In this regard, role of forensic experts play vital role starting from the core problem up to tracing of the material and confirming it. This article highlights few things regarding the substance abuse, role of forensic experts and a light towards pharmacovigilance.

**Keywords:** Substance abuse, drug abuse, forensic pharmacovigilance, forensic pharmacology

### Introduction

Drug trade is considered as the third largest business in the world, next to petroleum and arms trade. It has been a backdoor business of almost every country, hindering the wholesome development of a nation and destroying precious lives of resourceful youths, with substance / drug addiction and immense human distress <sup>[1]</sup>.

The world is witnessing a rapid growth of substance abusers; who had started using substance / drugs either to experiment or out of curiosity or due to peer pressure. The entire North-east India gets affected by the Golden Triangle, similarly the border states of the north-west; like Punjab, Jammu & Kashmir and Rajasthan get affected by the Golden Crescent <sup>[1]</sup>.

It not only affects the individual but also his family, friends and society – physically, socially and financially. This has led to an increased incidence of criminal and civil cases. To sensitize the citizens, the United Nations in 1987 adopted a resolution to observe International Day against Drug Abuse and Illicit Trafficking on June 26. India, also observes this day every year under Narcotics Control Bureau (NCB) as the nodal agency.

Despite all measures adopted by government and various agencies, the intake is increasing day by day amongst young generations; so, as the crime rate associated with it. Hence, it has been the need of hour that the skills and expertise of a forensic expert with knowledge about substance / drugs and chemicals can be useful in solving a diverse number of legal cases <sup>[2]</sup>.

### Forensic Expert in Substance Abuse cases:

In the court of law, crimes which are committed under the influence of a substance are the most frequently reported ones. These could be because of drug resulting in behavioral change or thought process of the person. Such substances are often involved in criminal and civil matters concerning personal injury, motor vehicle accidents, drug overdose, and murder. Hence, their actions and addiction liability are considered to have profound medico-legal implications.

During an investigation or in a court of law forensic experts must testify and clearly explain questions relating to the association of drugs / substances with an individual's behavior, injury, illness, or death. Invariably they will be asked to interpret the effects of substance/drugs, and their duration of action concerning medico-legal issues <sup>[2]</sup>.

### Drugs, alcohol, and driving

Forensic expert is compatible to interpret the concentration of alcohol in the blood and its typical effects.

Pharmacokinetics is employed to measure the blood level of alcohol at the time of the alleged crime. Drug interactions, synergistic or antagonistic effect of different drugs on alcohol absorption or metabolism, and the disease state present in the individual can be assessed and provide great help to the judicial system [3].

### Criminal cases

Substances are invariably used during suicidal attempts or homicide, or sexual assault and forensic experts have to testify whether the use of such drug or poison can cause mental impairment or the use of a specific substance as the reason for criminal aggression [4].

### Forensic Pharmacology

In India, clinical forensic medicine is neither well-developed nor implemented correctly; there is an inadequacy in providing proper medico-legal examination, accurate analysis, and appropriate documentation. In today's perspective, Forensic Medicine and Pharmacology must work in collaboration for high-quality and fast-paced medico-legal service in India. It is needed to accurately document and analyze the drug or chemical-related injuries of the victim and his or her body fluid samples. It can minimize the common errors occurring in emergency departments and hospitals. With the specialized workforce, errors in recognizing, collecting, or preserving evidential material, incorrect interpretations, or methods of investigation can be corrected [5, 6].

Forensic Pharmacology a part of forensic medicine, discusses toxicities from the drugs in therapeutic use, commonly abused substance/drugs, and drugs having no medicinal value [7, 8]. It deals with various laws on drugs, and schedules for procurement, manufacture, and distribution of drugs. Diverse new drugs are trouncing the markets with new molecules, claiming to contain "non-illegal" compounds but exhibit psychoactive effects called "smart drugs [9, 10]."

There is an emerging trend to abuse existing drugs are also found, so one needs to keep themselves updated with, their pharmacological or toxicological effects and also guide the community and regulatory authorities regarding the possible abuse of such drugs. Myanmar is one of Asia's main sources of illegal production of methamphetamine, or "crazy drug" yaba along with heroin, according to the International Narcotics Control Board and the United Nations Office on Drugs and Crime (UNODC). Bangladesh, which reported the World's largest seizures of prescription opioids in 2019, has become South Asia's biggest destination for yaba, with a market estimated at more than \$3 billion [11].

Advances in analytical techniques have made the detection of substance / drugs much easier which can help resolve medico-legal cases. Some can alter the neurotransmitters and lead to poor impulse control and aggressive behavior. The role of a forensic expert becomes significant in this case because he / she is needed to testify to the truth of this claims [12].

There has been a continuous rise in medico-legal cases related to the use of substances. This gives rise to various questions about the accuracy of the results obtained from the samples collected, the possibility to obtain the exact amount present at the time of death, the effect on the results due to the period elapsed since the death or the correlation of the results obtained from blood and different organs. This forms

the basis of the involvement of the forensic expertise in the substance-related medico-legal cases, who is the right person to provide an accurate correlation between the substance level in the body and associated postmortem changes.

An expert providing evidence in a court of law must possess special knowledge, skills, experience, training, and even education to achieve the qualification which enables him to give an expert opinion in a court of law. They are, therefore, needed to testify in court matters on different topics related to adverse drug reactions, medication errors, personal injury, drug testing, workman's compensation, impaired capacity, and driving under the influence of alcohol and poisoning.

### Forensic pharmacovigilance

Pharmacovigilance can be used in forensic cases like, e.g., establishing the effects of the drugs leading to crime (or) could this drug have caused this harmful effect on the person? Any injury or death in the form of adverse drug reactions that are caused by adulteration, or other substandard medicinal products which is identified by application of standard pharmacovigilance procedure is termed as "forensic pharmacovigilance" [13].

### Conclusion

In cases where corroboration cannot be made between the uses of a drug or substance with a specific associated outcome, it becomes difficult for a judiciary to offer an appropriate explanation. In such cases, a forensic expert can make a useful contribution by utilizing his or her knowledge of substance-related problems to provide relevant detail which helps to assist the legal system in taking the right decision.

### Conflict of Interest

Not available

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