



Announcement

DM Medical And Forensic Toxicology: Breaking The Barriers

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Toxicology is the study of the adverse effects of chemical, physical, or biological agents on living organisms and the ecosystem, including the prevention and amelioration of such adverse effects. There are various branches under toxicology, among those more relevant to physicians include clinical toxicology, analytical toxicology, forensic toxicology and to a certain extent occupational toxicology and environmental toxicology.

The knowledge of poisons and toxicology is very much essential for doctors especially those involved in emergency care or managing critically ill patients and also primary care physicians.

According to WHO, about 0.3 million people die every year due to various poisoning agents.¹ In India too according to a report on *Medical Certification of Cause of Death-2019*, death due to poisoning is one of the leading causes of death,² and these constitute only a tip of the iceberg. Such being the magnitude of poisoning cases and most of them present in an acute emergency, if not treated promptly and adequately, life may be lost.

In our country, many of health care centres lack appropriate facilities to treat poisoning cases. Also in centres with facilities, poisoning cases are not handled efficiently. The main reason for this is that the treating physicians are not trained adequately to manage poisoning cases. Most of the time, either no treatment is given or the wrong treatment is given to the patient. Due to lack of knowledge sometimes there is hesitation to handle poisoning cases and they are referred to distant hospitals where the so-called golden hour is lost.

The reason for the lack of adequate knowledge may be because exposure to clinical toxicology is comparatively less in the MBBS curriculum. Even though toxicology, as a subject is existing in the medical curriculum, it is not given much weightage. Toxicology is taught with forensic medicine, but it is taught with more relevance to the forensic aspect of toxicology rather than in terms of clinical aspects. Thus without the basic armamentarium of the knowledge of toxicology, the fresh medical graduate is pushed into the battle of dealing with poisoned patients.

Here at AIIMS Raipur little step is taken to attain a complete, all-inclusive toxicology setup, a first of its kind in India to cater for all aspects of toxicology including clinical toxicology, analytical toxicology and forensic toxicology under one course DM Medical and Forensic Toxicology, so that a comprehensive knowledge of xenobiotics can be acquired which can help in the meticulous management of poisoning cases. The course provides a holistic approach to poisoning cases with proper clinical diagnosis, toxicology screening and analysis of appropriate body fluids or visceral samples to confirm the clinical diagnosis or to rule out poisoning and effective management of cases, also in unfortunate incidents of death, an autopsy is conducted for medico-legal purpose as-well to recognise the mechanism and exact cause leading to the death of the individual due to poisoning.

The course has an intake of 1 candidate per session, i.e., 2 per year. The eligibility criteria for the course are MD/DNB in any of the following subjects- Forensic Medicine and Toxicology or Pharmacology or Emergency Medicine or

General Medicine or Paediatrics. The duration of the course is 3 years. During the course, poisoning cases are handled by the resident trainee in toxicology, which involves an initial evaluation of the poisoned or a suspected case of poisoning and assessment of critical conditions for immediate intervention and stabilisation. Following the meticulous history, examination and with basic investigations a toxidromic approach is used for differential diagnosis or to rule out poisoning. On confirmation, the patient is managed with appropriate treatment. Shortly a dedicated toxicology speciality unit will be launched with all modern advanced facilities for managing poison cases. Toxicology screening and analytical toxicology are done where required, using bedside tests and other qualitative screening tests. In certain cases, qualitative confirmatory tests and in a few, quantitative tests for xenobiotics are conducted. Advanced equipment for the analysis of body fluids for toxins are in pipeline. The registered candidate, if from Pharmacology or Forensic Medicine & Toxicology is given adequate exposure to the handling of clinical cases including those in the Emergency ward and ICU. Likewise, if the candidate happens to be from General Medicine, Paediatrics or Emergency Medicine, he/she is trained in the initial six months to handle medico-legal cases as well as to conduct medico-legal autopsies, especially those pertaining to toxicology.

Encouragement and facilities are provided for research in various areas of toxicology, thus producing a medical toxicologist with a competitive edge in managing poisoning cases. The candidates obtaining training in this course can practice as a medical toxicologist at various levels of health care setup including corporate hospitals and medical colleges. As such at present, there are no qualified trained physicians dedicated to toxicology. This course would produce a medical toxicologist with all skills to handle both poisoning cases as well as other medico-legal cases.

This is a small step taken by AIIMS Raipur, drawing inspiration from the solid foundations laid down by stalwarts like Prof VV Pillay, Prof OP Murty, Prof Anil Aggrawal and many others who have worked hard to raise awareness and demand for the neglected subject of toxicology. We hope this small endeavour is polished, refined and carried forward to make it a more robust course.

References

1. Guidelines for establishing a poison centre. Geneva: World Health Organization; 2020.
2. [Internet]. Censusindia.gov.in. 2022. Available from: https://censusindia.gov.in/2011-Documents/mccd_Report1/MCCD_Report_2019.pdf

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