

Toxicology and emergency medicine

Toxicologia e medicina de emergência

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Toxicology has been a science of interest since the dawn of mankind.¹ There are documents containing information about poisons, such as hemlock, opium, and lead, dated to 1,500 B.C. (Ebers Papyrus).¹ Paracelsus brought concepts in the 17th century that remain integral in the current structure of toxicology, pharmacology and therapeutics, such as the maxim that the difference between poison and medicine is in the dose (dose-response relationship).^{1,2} With the advent of anesthetics and disinfectants in the late 1850s, toxicology began, as it is now understood.³ Laws were created to promote the control of substance use in medicines and food around the world. In the United States, the second bill passed by the Food and Drug Administration (FDA) in 1938 related to the control of the use of toxic substances.³ At the same time, in Europe, one of the first journals expressly devoted to experimental toxicology was the *Archiv für Toxikologie*, published in 1930.⁴ Today, hundreds of professionals, government organizations, and other scientific organizations practice toxicology, and there are more

than 120 scientific journals dedicated to it and related disciplines.⁴

The history of emergency medicine dates back to World War I,⁵ when it was deduced that triage systems and the concept of agility in care had a major impact on the survival of wounded soldiers.⁵ At that time, the two specialties were already going together, because the repercussions caused by the use of toxic substances, such as mustard gas and phosgene, were responsible for a considerable portion of injuries and deaths.⁶

Currently, in Brazil, there are an estimated 775,649 hospital admissions for poisoning in recent years, according to data from the *Departamento de Informática do Sistema Único de Informática (Datapus)*, from 2017 to 2021.⁷ Poisonings are responsible for about 5 to 8% of the total emergency room visits in the country.⁸ The need for training of emergency physicians in the management of acute poisoning and accidents by venomous animals is undeniable. The Emergency Department is the great gateway for patients suffering from poisoning and provides knowledge and opportunities in this regard, directly impacting patient care and public health.


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The training of the medical professional in toxicology follows, in most countries, a path linked to the areas of internal medicine, pediatrics or emergency medicine. The specializations, fellowships and residencies in medical toxicology are inserted in programs of emergency medicine, internal medicine and pediatrics. In Brazil, in 2012, the *Conselho Federal de Medicina* (CFM), through resolution 2005/12, included Medical Toxicology in the list of recognized areas of activity in the country.⁹ This new area began to interface with the specialties of clinical medicine, intensive care, pediatrics, and pulmonology, and, therefore, the *Associação Médica Brasileira* (AMB) established that these specialties would be the prerequisite options for toxicology. It is observed, however, that emergency medicine is not among the prerequisites, as it did not exist. At the time, the institution's treasurer stated that "Our goal is to bring together professionals related to the areas of occupational toxicology, environmental toxicology, clinical pharmacology, and urgency and emergency medicine to begin to discuss the competencies of this area of expertise."¹⁰

Toxicology, therefore, materialized before emergency medicine in our country. Emergency medicine was recognized as a specialty only in 2015, although initiatives before residency existed through the specialization program in emergency medicine in Porto Alegre (RS), in 1996, and Fortaleza (CE), in 2008.⁵

Right at the installation of the specialty in 2015, the importance of the affinity of toxicology with emergency medicine was already recognized. At that time, there were signs of interest from the *Associação Brasileira de Centros de Informação e Assistência Toxicológica* (Abracit) and the *Centro de Assistência Toxicológica de Minas Gerais* (CIAToxMG) in including emergency medicine as a prerequisite option for toxicology. At the time, the two entities sent letters to the *Associação Brasileira de Medicina de Emergência* (Abramede) and the AMB suggesting the possibility of adding the area of operation as a subspecialty of emergency medicine. There was no return from any of the associations. Since then, new letters have been forwarded by the current coordinator, Dr. Adebald de Andrade Filho, in 2018, 2020, and 2022, on behalf of Abracit and CIAToxMG. Abramede also applied with AMB and CFM. So far, the reasons for the delay are

unclear; it is not known what the position of the bodies responsible for the deliberation is and what actions are pending and necessary for the request to be met.

Meanwhile, the only residency in medical toxicology in the country, held at the João XXIII Hospital in Belo Horizonte (MG), since 2014, where about 2,000 intoxicated patients are treated monthly, lives a paradox: there is the interest of specialists in emergency medicine to attend the area of activity, but it runs the risk of being suspended for lack of enrollees who meet the official prerequisites. Not only this residency is at risk, but also the interest in opening new residencies in medical toxicology due to this same dynamic, a fact that also affects the maintenance of the specialty.

The mobilization of emergency physicians and residents interested in the toxicology subspecialty and toxicology services can put pressure on the responsible institutions to strengthen the ties between the area of activity and a specialty that seems so natural to be their prerequisite. We cannot give up adding knowledge and appreciation to two specialties present in daily life for so long and of evident relevance in the national health scenario.

On March 23, the specialty of emergency medicine was approved as a prerequisite for toxicology at the AMB. The process still depends on approval by the mixed committee of specialties.

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