G89 Medications Error: Easy and Frequent Occurrences of Events but Difficult Reconstruction and Demonstration

Federica Colosimo, MD, Luca Gallelli, and Giulio Di Mizio, PhD, MD, Magna Graecia Univ, Viale Europa Loc. Germaneto, Catanzaro, ITALY*

The goal of this presentation is to show how medication errors represent preventable incidents occurring at any point in a chain of events beginning with prescription writing and continuing on to both drug dispensation and administration.

This presentation will impact the forensic science community by serving as a key aspect during drug dispensing; in fact, it is possible that a better counseling could reduce the risk to develop adverse events.

Several data have been published regarding this problem. In fact, it has been estimated that medication errors account for about 78% of serious medical errors in intensive care units; it is important to underline that a medication error can involve drug-related problems during the homecare setting. In particular, a recent paper has estimated that up to 30% of homecare patients experience a potential medication error, happening during preparation and administration of drugs. Medication errors can also induce a decrease in patient health status with an increase in health-care costs and occurs at every stage of the drug delivery process, i.e., prescribing, transcribing, dispensing, and administering.

However, the risk of the development of a serious disease induced by a medication error could be related to three factors: polytherapy, age of patient, and the therapeutic index. In fact, polytherapy could induce the development of drug-drug interaction; elderly patients present a physiological decrease of drug metabolism and drug excretion, responsible for drug accumulation; finally, the therapeutic index represents the safety of each drug; therefore, a medication error related to the administration of a drug with a very low therapeutic index (e.g., digoxin, theophylline, or anticancer drugs) could easily induce a decrease in health status.

Cases of personal observation will be presented in which medication errors have caused damage to the patients, or even death. They also perform the analysis of organizational remedies feasible with good clinical practice of risk management. Finally, the possible consequences of trial relating to these events, both in criminal court and in the compensation of damages, will be addressed. Therefore, it becomes an important aspect during the discussion on the methodology of forensic evaluation of the damage, for which it is crucial to establish a causal link between incorrect drug dosage and development of damage. The forensic criteriology based on Italian legal doctrine provides an adequate response to the need to perform, in such cases, assessments based on both strict survey methodology and laboratory protocols scientifically validated. The above methods could reduce the maximum margin of error and allow rule out other causes of disease. The medicolegal criteria that should be demonstrated to establish a causal connection between medication error and damage involve four major criteria: *anamnestic* criterion (e.g., the history of the patient), *clinical* criterion (e.g., clinical signs or symptoms and biochemical markers of disease), *anatomo pathological* criterion (usually performed on a cadaver, aimed at macroscopic and microscopic morphological recognition of specific target of organs and tissues due to drugs), and, finally, *toxicological* criterion (that is an “objective criterion” involving the identification and isolation of the substance given).

Medication Error, Clinical Risk Management, Clinical Pharmacology

 ** Presenting Author*