

Fatality involving vinblastine overdose as a result of a complex medical error

MAŁGORZATA KŁYS, TOMASZ KONOPKA, MARIUSZ ŚCISŁOWSKI, PIOTR KOWALSKI

Department of Toxicology, Institute of Forensic Medicine, Collegium Medicum, Jagiellonian University, Krakow, Poland

The purpose of the study is a presentation of a fatal case involving an 83-year old woman, who died due to an overdose of vinblastine – a cytostatic agent of a vinca alkaloid employed in cancer chemotherapy.

The problem started when the woman was hit by a car, what resulted in her right lower limb contusion. A lower leg bruising persisted for a long time; subsequently, the hematoma spontaneously perforated forming a wound that started to heal by granulation. In view of the problems with wound healing an orthopedist suggested a therapy with a new, expensive drug. As he testified later, he had had in mind „Vasolastine” manufactured by ENZYPHARM, an enzymatic preparation employed as an adjuvant agent in abnormal wound healing. In the pharmacy, following initial problems with deciphering the name of the medication, the staff assumed that the physician must have meant „Vinblastin”. The names of the medications “Vinplastin” and „Vinblastin” are sound-like, and their spelling differs in one character only (“p” vs. “b”). In consequence, the patient received one 5 mg ampoule of vinblastine per day. After the sixth dose, the daughter brought the patient for a follow-up examination in an Outpatient Orthopedic Clinic, reporting weakness observed in the female; in view of further progressive deterioration of the patient’s health the woman was taken to hospital.

Upon admission, the daughter produced medications her mother had been taking. She expressed her conviction that deteriorated health was most likely associated with the administered drug. It was then concluded that the mother received without good reason a very high dose of the anti-cancer medication „Vinblastin”. Over several subsequent days, the patient further deteriorated, finally the patient developed cardiac arrest, was resuscitated, but she continued to be in a deep coma and several hours later died.

The postmortem investigation included an autopsy and histological examination, as well as a toxicological analysis of post-mortem specimens collected in the course of autopsy. The authors performed a toxicological assessment of vinblastine employing liquid chromatography- atmospheric pressure chemical ionization- tandem mass spectrometry (LC-MS-MS-APCI). The determined vinblastine concentration levels amounting to 29 ng/g in blood and 52.5 ng/g in liver were in a considerable excess of values encountered in patients on chemotherapy using the drug.

The fatality was investigated in the context of medical error. In the described case, the erroneous and medically unjustified administration of vinblastine was identified by a series of unfortunate events involving as many as three acting consecutively individuals: a physician, a pharmacist and a nurse. The report may thus document the clinical course of vinblastine poisoning along with postmortem changes resulting from the drug action.

KEYWORDS: *Vinblastine, Overdosage, Medical error, Liquid chromatography, Atmospheric Pressure Chemical Ionization Mass Spectrometry*

Corresponding author: mpklys@cyf-kr.edu.pl