

# Medication errors reported to the Italian Poison Control Centers: a pilot study

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## Introduction

Understanding the main determinants of medication errors (MEs) can provide an informative bases for preventive strategies. In Italy as well as in other European countries Poison Control Centre (PCCs) can provide detailed information on cases of MEs and the main reasons for exposure.

The National PCC in Milan, in collaboration with the Italian National Institute of Health (ISS) and the Italian Medicines Agency (AIFA), has recently developed a national pharmacovigilance system of MEs and adverse reactions based on cases managed by PCCs (FarViCAV).

## Results

A total of 3,430 MEs were notified to the Italian surveillance system during the first year of activity. About 40% of cases were aged <5 years, 18% 5-19 years, 26% 20-69 years, and 17% 70 years or more (Figure 1). The most frequently reported types of ME (Figure 2), were wrong dosage (54%) and wrong drug (25%). About 40% of patients were victim of their own mistake and 55% of their caregivers mistake. Some 1% of MEs involved hospitalised patients. Most of cases (82%) were asymptomatic (Figure 3). However, at least one treatment was prescribed by the consulted PCC for 40% of all cases. Among patients suffering from signs or symptoms possibly related to the reported ME, 34% reported neurological, 29% gastrointestinal, 10% neuromuscular, and 9% cardiovascular effects. Severity of poisoning was minor in 10% of cases, moderate in 6%, and severe in 2%. The most frequently reported agents were: acetaminophen (492 cases, 73% aged <5 years), amoxicillin (193 cases, 71% aged <5 years), azithromycin (No 85, 69% aged <5 years), ibuprofen (84 cases, 58% aged <5 years), salbutamol (No 68, 73% aged <5 years), and tiotropium bromide (64 cases, 70% aged 70 years or more).

## Objective

To provide a preliminary descriptive analysis of the main characteristics of cases of MEs handled by the Italian PCCs over a one year period (from April 16, 2012 to April 15, 2013).

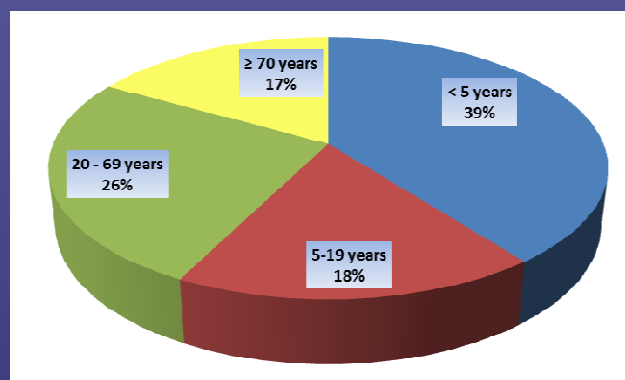


Figure 1. Distribution of medication errors by age.

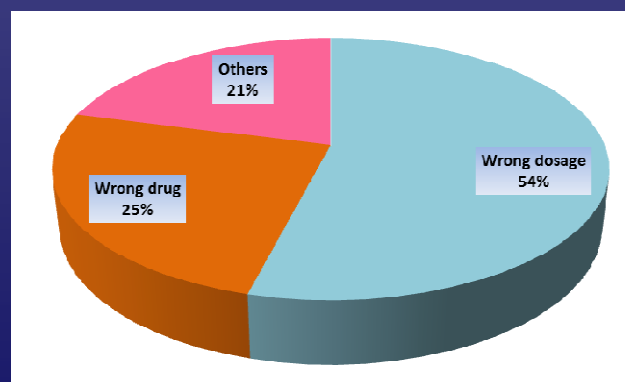


Figure 2. Reason for medication error.

## Conclusions

PCCs can provide a relevant contribution to pharmacovigilance providing timely and detailed data on MEs and their determinants.

## Methods

For each case of ME, the collaborating PCCs used a standard form to collect the following main categories of information: patient characteristics, i.e age, weight, gender; site of exposure; the pharmaceutical agent; reason for ME; management site; signs\symptoms; treatments recommended by the PCC. Pharmaceutical agents were grouped according to the WHO's Anatomical Therapeutic Chemical (ATC) classification system and active ingredient. Severity of signs\symptoms possibly related to the reported pharmaceutical agent was graded according to *Poisoning Severity Score* (Persson HE et al. J Toxicol Clin Toxicol 1998; 36(3): 205-13). The descriptive analyses of the data was carried out.

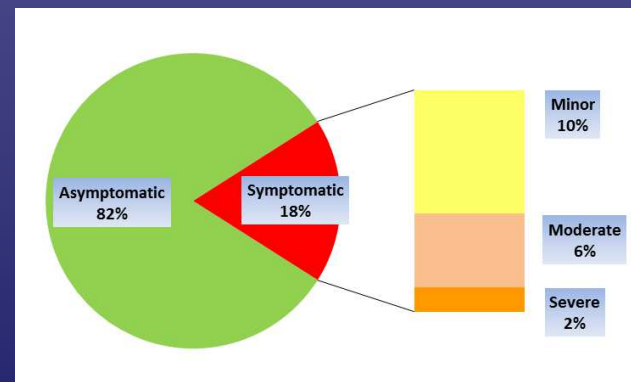


Figure 3. Presence of signs\symptoms and related severity.



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