Adverse drug events in two emergency departments in Naples, Italy: an observational study
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Abstract
The aims of this study, conducted in the emergency departments of two hospitals of Naples (Italy), which differ in type of catchment area and in the number of daily visits, were to determine: (1) the percent of emergency department visits due to adverse drug events (ADEs); (2) the percent of visits requiring hospitalisation due to acute ADEs; (3) the drugs implicated in ADEs; and (4) the types of ADEs and their frequency. We studied all emergency department visits at the A. Cardarelli and Incurabili hospitals between 8.00 a.m. and 8.00 p.m. (prospectively), and between 8.00 p.m. and 8.00 a.m. (retrospectively) for two 10-day periods. When possible, a form was completed for each subject. Patients were asked if they had taken a drug (name, dosage and reason for its use) in the previous 2 weeks. Of the 2442 emergency visits considered, 34 (1.3%) were drug related. Of the 480 patients who were subsequently hospitalised 17 (3.6%) had an ADE. The number increased to 34 (8.9%) in the 379 patients who took drugs in the 2 previous weeks. Non-steroidal anti-inflammatory drugs accounted for 26.5% of cases, antibiotics 23.6%, and antihypertensive agents 17.7%. The most frequent ADEs were gastrointestinal diseases (diarrhea, vomiting and haemorrhagic gastritis) and cutaneous rash (erythema, dermatitis). This study shows that ADEs account for a large percent of hospital admissions and confirms that drug-induced disorders is a notable public health problem.
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Keywords: Emergency department; Adverse drug reaction; Pharmacovigilance

1. Introduction
Adverse drug events (ADEs) are an important challenge in modern medicine. They have a considerable negative impact on both health and healthcare costs [1], and their incidence has been reported to range from 5.9 to 22.3% of all emergency department admissions [2]. Adverse drug reactions have been shown to prolong hospitalisation by 1 and 7 days, respectively, in 6 and 12% patients affected by common diseases [3,4]. In a general medicine department, pharmacological therapy had to be prolonged in 3.8% of hospitalised patients because of ADEs and 5% of these patients had life-threatening ADEs [4]. Monitoring of emergency department visits is a well-established method with which to evaluate the frequency of ADE-related hospital admission [5–10]. The Italian Society of Pharmacology and the Epidemiological and Biostatistics Laboratory of the Istituto Superiore di Sanità promoted an observational epidemiologic study of ADEs in 24 emergency departments in Italy. The aims of the project were to evaluate: (1) the number of visits to emergency departments due to ADEs; (2) the percentage of hospital admissions due to acute ADEs; (3) the drug classes most frequently involved in ADEs; (4) the types of ADEs and their frequency. Here we report the results obtained in the emergency departments of the A. Cardarelli and Incurabili hospitals in Naples, which have about 100,000 and 25,000 emergency room visits, respectively, a year. The Cardarelli Emergency Department is constituted by various clinical and surgical units, including the following specialties: ENT, ophthalmology, and a severe burns centre; its catchment area is Naples and all southern Italy regions. The Incurabili Emergency Department is constituted by only two units (surgery and clinics), and it serves people living in the vicinity of the hospital.