



EDITORIAL

Medication errors in paediatrics: In search of a new vaccine[☆]



Errores de medicación en pediatría: en busca de una nueva vacuna

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Medicine in the twenty-first century cannot be understood without drugs: without them there is no cure, and with them we have to confront prescribing errors and adverse drug reactions. In 2005 the Spanish government instigated the National Study of Adverse Effects (ENEAS) connected with hospitalisation. It showed that almost 10% of the patients admitted to hospital suffered an iatrogenic adverse effect, and that almost 30% of these were caused by medication.¹ In 2007 the United States Institute of Medicine published a report entitled ‘Preventing Medication Errors’, emphasising that at least 1.5 million preventable adverse events occur per year in that country.¹

There is no standard, internationally accepted definition of what constitutes a medication error. It is therefore difficult to analyse the various studies published on the subject. Moreover, since it is not clear what ought to be communicated, we are dealing with a phenomenon in which what is reported falls far short of its true proportions.¹

Among the many existing descriptions, there are three outstanding concepts that help us to understand the nature of medication errors and are constantly repeated: errors are preventable, they are not always harmful, and their origins are multifactorial and multidisciplinary.^{1,2} But these concepts do not solve the practical issues that the problem raises.

When a possible medication error arises, most health care professionals do not know the medico-legal consequences

of notification.³ If no harm has been done, why report it? And if it has... ‘what is not written down does not exist’. Worse still, doctors who do decide to report errors enter a demoralising bureaucratic maze in which they do not know how, where or to whom they should address themselves. It is likely that their efforts will have no effect. This closes the vicious circle. Because medication errors are hardly ever reported, we do not know the real extent of the problem. And yet any doctor knows that medication errors can be fatal.

Errors in paediatrics: more frequent and dangerous

In paediatrics it is even more important to analyse safety in drug administration.

Because of the need to calculate dosage on the basis of weight, age or body surface area, and pharmacokinetic and pharmacodynamic differences compared to adults, children are particularly vulnerable to medication errors, and the associated morbidity is potentially greater.^{1,2}

In addition, drugs are commonly used off-label. In a recent survey⁴ by the AEP’s Comité de Medicamentos (Drugs Committee), 23% of the paediatricians polled were unaware of the existence of this practice, and almost 50% did not know when they used it or reported that they never prescribed drugs off-label.

An additional problem is the lack of specialised pharmaceutical products properly adapted to paediatric needs, which very often forces doctors to resort to a magistral formula.¹ Equally serious is the fact that there are currently over 170 drugs of various kinds that are temporarily

[☆] Please cite this article as: Piñeiro Pérez R. Errores de medicación en pediatría: en busca de una nueva vacuna. An Pediatr (Barc). 2014;81:341–342.

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or permanently out of supply,⁵ at least 10% of which are paediatric formulations. These shortages oblige paediatricians to work out ways to replace one drug with another or to administer them by routes that have not been adequately tested.

Errors: inevitable, but preventable

All the projects that have helped to bring about an increase in the reporting of medication errors, and a subsequent reduction in such errors, involve similar initiatives, based fundamentally on creating and fostering a culture of drug safety and providing new working tools.

These initiatives include multidisciplinary safety committees, training courses for all health care staff to raise awareness of drug prescription and administration rules, confidential, anonymous and non-punitive reporting systems, user-friendly forms enabling errors to be communicated rapidly (computer applications, for example), and designing drug administration manuals and protocols. It is also advisable for prescription forms to be double- or triple-checked (for example, by paediatricians, nurses and pharmacists), especially with drugs that involve a higher risk of causing serious harm in the event of an error, such as opiates, cytostatic drugs, insulins, anaesthetics, antibiotics and even minor analgesics like acetaminophen.^{1,2} Computerisation of prescription and administration forms is also recommended.^{1,2}

Medication errors are inevitable; they cannot be completely eradicated. However, they are preventable, and their number and impact can be reduced. It is much the same as with hospital-acquired infections. Just as we sterilise our hands and operating theatres, so is our duty as paediatricians, and as doctors, to have a restless neuron somewhere in our brain that is constantly on the alert, forcing us to check what we prescribe at least twice. And if we do commit or detect an error, to report it, analyse the consequences, examine the causes that led to it, correct them and prevent the same mistake happening again in the near future.

The fact that an error has not led to any consequences does not mean that the next one may not do so. In order for voluntary reporting to work, it is essential that it should be anonymous and that the responsibility in serious or fatal cases should lie with the management and not with one particular professional, since errors are rarely the result of a single person's carelessness or recklessness. The idea is not that individuals should be immune from blame but that responsibility should be shared.

However, conscious reporting by doctors is not enough. It is essential to ensure that parents properly understand all the oral and written information they receive. For example, there is no reason why the whole population should know that a "cc" is the same as an "mL" or understand what the little lines marked on a syringe mean. The patient information leaflet, which even doctors themselves sometimes

find difficult to decipher, is not much help. It is not unusual for a paediatrician to have prescribed by weight whilst the leaflet indicates the dose by age. These are aspects of doctor-patient communication that certainly need to be reviewed.

In addition, multidisciplinary safety committees should be set up in all hospitals and health centres to control, monitor, detect, report and correct medication errors. An essential requirement is to have integrated computer programs containing the patient's clinical history that automatically alert prescribing paediatricians to drug interactions, unnecessary treatments, allergies, contraindications and inappropriate dosages.

"Everybody makes mistakes. The art is in making them when nobody's looking." This quotation, by the actor, writer and playwright Peter Ustinov, sums up perfectly the situation we have to change. The aim is precisely that if we do commit an error, someone should be looking, and that if no one is looking, we should follow Benjamin Franklin's advice: "only the righteous man is able to confess his faults and admit mistakes." Or better still, Joseph Pulitzer's regime: "We do not tolerate mistakes here, and when we discover them we do not rest until we have corrected them."

If we had accurate data on the impact of medication errors in paediatrics, they would probably be at least equivalent to a common infectious disease like chicken pox. The vaccine is in our own hands, and no one can take it away from us.

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