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ORIGINAL ARTICLE

Prescribing errors in general practice: A prospective study

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Abstract

Prescribing is one of the commonest tasks in daily general practice. Surprisingly there is little published research on errors that occur in this area. The aim of this study was to estimate the seriousness and level of prescribing errors that occurred in general practice. This prospective survey documented errors in prescriptions from 28 general practitioners as they occurred over a 3-day period in 12 community pharmacies. From a total of 3,948 prescriptions, 491 (12.4%) contained one or more errors. From a total of 8,686 drug items, 546 (6.2%) contained one or more errors. Of the errors the majority were minor (398, 72.9%), a smaller number (135, 24.7%) were major nuisance errors, and there were 13 (2.4%) potentially serious errors. The most common errors related to drug directions and dosage.

Key words: *prescribing errors, general practice*

Introduction

The average general practitioner signs 13 000 prescription items per year, of which 5000 are written during consultations and 8000 are repeats (1). This figure is expected to double each year as the population ages and pharmaceutical companies continue to launch new products (2).

Medication errors, defined as any error in the prescribing, dispensing, or administration of a drug, whether there are adverse consequences or not, are the single most preventable cause of patient injury (3). Prescribing errors may be defined as an incorrect drug selection for a patient, be it the dose, the strength, the route, the indication, the contraindications (4). Many studies have been carried out on medication errors in the hospital setting, and they have been shown to cause deaths, increase hospital costs, and also increase length of hospital stay (3–7).

Medication errors are not confined to the hospital setting, but little has been published about the situation in primary care and none identified in Ireland (8). It is important, however, as reports from the professional indemnity bodies reveal that 25% and 19%, respectively, of legal claims against general practitioners relate to medication errors (9,10).

International studies have indicated a wide variation in prescription error rates occurring in primary care, ranging from less than 1% to over 40%, depending on study design, in particular how an error is defined (11–14). The objective of this study therefore was to estimate the seriousness and level of prescribing errors that occur in the Irish primary care setting.

Methods

This was a prospective survey, which documented prescription errors as they occurred in prescriptions from 28 general practitioners over a 3-day period in November 2003 in 12 community pharmacies. A data collection form was designed by the authors to record the most commonly occurring prescription errors as shown in previous studies.

The data collection flow sheet requested information on date omission, signature omission, poor legibility, age omission if for a patient under 12, issues concerning drug name, errors/omissions in directions, and also potential drug interactions. Also requested was whether the script was computer generated or hand written, and whether it was a medical card or private script. If a pharmacist had to telephone the



Figure 1. Frequency of errors according to error type.

doctor for clarification of the prescription, this was also documented.

The data were then entered into a Microsoft Excel spreadsheet and analysed in this, Microsoft Access, and JMP Statistics. The errors were reviewed by at least two of the GP authors to identify and enumerate the most potentially adverse and to categorize the severity of error into the classification devised by Neville et al. (15). A type C error was termed a minor nuisance error and involved the pharmacist making a professional decision prior to dispensing. A type B error, a major nuisance error, involved the pharmacist having to contact the prescriber prior to dispensing. Potentially serious errors were termed type A errors and involved potentially harmful prescribing.

Results

Over the 3-day study period, a total of 3948 prescriptions were dispensed from the 12 pharmacies. The prescriptions contained on average 2.2 items, which is consistent with data from national research (16). Of this total, 491 (12.4%) prescriptions contained one or more errors. The total number of items (8686) containing errors was 546 (6.2%). As some items contained more than one error, the total number of errors recorded on the 491 scripts was 672.

From the results, the drug category that had the highest frequency of errors was that of cardiovascular drugs. Controlled drugs contributed to a relatively small number of errors. The commonest error that occurred was that there were no directions/inadequate directions, which together made up nearly half of the total number of errors (Figure 1). The “no directions” category was used when there were no directions given on the dose, frequency of use of the medication, or the quantity that needed to be supplied. If some but not all of the above prescribing criteria were omitted, the error was categorized as “inadequate directions”.

According to the Neville classification, the majority of errors were minor (398, 72.9%), a smaller number (135, 24.7%) were major nuisance errors, and there were 13 (2.4%) potentially serious errors (Table I).

Discussion

Prescribing is one of the commonest tasks in daily general practice. Surprisingly, there is little published research on errors that occur in this area.

The overall error rate detected in this study was 6.2 per 100 items prescribed. This is comparable with the results of 7.46% found in a large study undertaken in the UK in 2001, involving the analysis of 37 821 prescription items (14). As in this study, they noted that the most common errors related to directions, and the most common drug category involved were cardiovascular drugs. One hundred and forty-eight telephone calls were made from the 12 pharmacists to general practitioners over the 3-day period. This obviously increases the workload for the pharmacist and the general practitioner.

Prescribing errors associated with general practice prescriptions are an everyday occurrence. While all GPs should try to improve the way in which

Table I. Type A errors.

Interactions	1	Erythromycin	Interacts with melleril
	2	Klacid Forte	Interacts with other meds that patient taking
	3	Frusemide, centyl, burinex	All prescribed for same patient
Dosage	4	Frusemide	1 daily instead of 2
	5	Clopixol	20 mg once daily instead of 10 mg
	6	Actonel weekly	Written daily
	7	Cordarone	Dose exceeding therapeutic guidelines
	8	Cardura	Dose exceeding therapeutic guidelines
	9	Oromorph	Dose not matching that on accompanying hospital prescription
Directions	10	Paramol	Wrong directions
Legibility	11	Prothiaden	Printed o/d (once daily) looked like qds (to be taken four times daily)
Allergies	12	Geramox	Patient allergic to same
	13	Erythromycin	Patient allergic to same

prescriptions are written, it is worthwhile noting that there were relatively few instances of dangerous prescribing (0.15%).

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