Doctors’ and patients’ perceptions of adverse drug reactions in a general medical and an anticoagulant clinic

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Communications between patients and their doctors concerning drug treatment are frequently less than ideal. Previous studies and surveys have revealed that doctors are often unaware of the drugs their patients are taking and that there is dissatisfaction amongst patients with the level of information given to them about their drug treatment [1–3]. To assess the level of communication between patients and hospital-based doctors, we have conducted an audit in two groups of patients of drug usage and of patients’ understanding of their therapy. One group attended a general medical outpatient clinic, the other an anticoagulant clinic; of the latter group, all were being treated with warfarin.

The study examined whether patients knew what their drug treatment was, why they were taking it and whether they knew of or had experienced any adverse drug reactions (ADRs). Information was also obtained as to whether patients were satisfied with their understanding of their drug treatment and of possible ADRs.

The risk of having an ADR appears to be increased in patients with a history of a previous ADR [4,5]. However, in these studies, it was unclear whether the source of the report of the previous ADR came directly from the patient or from medical records. A standard part of taking a clinical history involves asking patients whether or not they have had a previous ADR and their answer may have a significant effect on subsequent prescribing. The present study compares the ADR history obtained directly from patients with that recorded in the hospital case notes.

Methods

Subjects

One-hundred-and-four consecutive review patients attending a general medical outpatient clinic conducted by members of a clinical pharmacology department in a teaching hospital and 103 consecutive review patients attending an anticoagulant clinic in a district general hospital were asked to complete the questionnaire shown in an abbreviated form in Table 1. All patients had attended a clinic on at least two prior occasions. In the general medical clinic, patients saw the same doctor on each visit. Patients attending the anticoagulant clinic were seen by a doctor on the first two or three visits and on subsequent visits by a senior nurse. Amended warfarin dosing instructions were sent by post and patients were seen by the clinic doctor if their anticoagulation control was poor or if they wished to be seen.

The questionnaire took about five minutes to complete and patients answered it before seeing their doctor or nurse. A few patients required assistance which was provided by an independent nurse or doctor.

In both groups of patients the clinic doctor was asked, with reference to the medical notes, to provide the

| Table 1. Questionnaire (abbreviated) |
|-------------------------------------|
| Patients were asked to supply the following information: |
| 1. A list of drugs they were taking. |
| 2. The medical reason for taking each drug. |
| 3. Their knowledge of possible adverse drug reactions to their therapy. |
| 4. The sources of information (other than doctors) relating to their therapy. |
| 5. Whether they had experienced an adverse drug reaction in the past or from their current therapy with details of the reaction where appropriate. |
| 6. Whether they would have wished for more information about either the reasons for or the side effects of their drug therapy. |

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diagnosis, current treatment and history of a previous or present ADR for each patient. This information was recorded before the patient was seen.

Adverse drug reactions

Patients’ reports of adverse drug reactions were accepted if they fell into either the ‘definite’ or the ‘probable’ category as defined by the Registry of Tissue Reactions to Drugs [6].

Results

General medical clinic

All 104 patients who were approached completed the questionnaire.

There was agreement in only 52 per cent of cases between doctor and patient concerning the patient’s current drug therapy (Fig. 1). Some patients (9 per cent) had stopped taking treatments which their doctor thought they were still taking, but 29 per cent were taking drugs without the doctor’s knowledge. Ten per cent of patients had stopped a treatment which the doctor thought they were still taking and in addition they were taking a treatment without the doctor’s knowledge. Thus, 39 per cent of patients were taking drugs without their doctor’s knowledge. The main groups of drugs being so taken were analgesics, including aspirin, paracetamol, codeine, co-proxamol and dihydrocodeine (30 per cent), benzodiazepines (16 per cent), non-steroidal anti-inflammatory drugs (NSAIDs) (15 per cent), and diuretics (11 per cent).

Seventy-seven per cent of the patients knew the names of most (>50 per cent) of their drugs and 81 per cent knew the reasons for taking most (>50 per cent) of them.

Patients and doctors disagreed on the prevalence of adverse drug reactions. Sixty-one per cent of the patients were thought either by the doctor or by themselves to have had an adverse drug reaction at some time. In all, 69 ADRs were reported, 39 by the patients and 41 by the doctor. However, agreement between the doctor and patient as to whether or not an ADR had occurred was limited to 11 cases.

The reported ADRs covered a wide range (Table 2) but there were some serious differences between the patients’ and doctors’ reports. Seven cases of penicillin rash, documented in the case notes, were not reported by the patients, and one patient, with a recorded history of epigastric pain caused by aspirin and gastrointestinal haemorrhage with warfarin, also failed to report these ADRs.

Patients’ knowledge of side effects to the potentially more dangerous drugs is shown in Table 3.

Four patients had obtained information regarding their drug therapy from a source other than a doctor; one diabetic had obtained information from the British Diabetic Association; a patient on a cardiac anti-arrhythmic agent had heard information on the radio; a schizophrenic (who was also hypertensive) had obtained information on her treatment from a voluntary worker and a patient with Wilson’s disease had obtained information from medical journals. Two patients with heart disease had read booklets provided by the hospital giving information about their condition.

The majority of patients (67 per cent) felt they knew enough about the indications for their drug treatment; 28 per cent would have liked further information. However, within this latter group of 29 patients there were nine who also said that they knew enough about the indications for their treatment. Forty per cent of patients said they knew enough about possible side effects of their treatment; 41 per cent would have liked to have known more. Again, these groups were not mutually exclusive, with six patients appearing in both.

Anticoagulant clinic

All 103 patients completed the questionnaire. In 47 per cent of cases patients and doctors agreed as to the number of drugs being taken. Thirteen per cent of patients had stopped a treatment the doctor thought they were still taking and 19 per cent of patients were taking a medication of which the doctor was unaware. Twenty per cent of patients had stopped a treatment which the doctor thought they were still taking and were also taking a treatment of which the doctor was unaware. Thus, 39 per cent of patients were taking drugs of which the doctor was unaware. These drugs were a varied selection; the most common groups were diuretics (23 per cent), analgesics, including aspirin, paracetamol, dihydrocodeine, and slow release morphine (13 per cent), benzodiazepines (11 per cent) and NSAIDs (9 per cent).

The majority of the patients knew the names of their drugs and the indications for their treatment (90 per cent knew the names of 50 per cent or more of their drugs; 79 per cent knew the indications for 50 per cent or more of their drugs). The prevalence of ADRs was lower than in the general medical clinic; in all, 24 ADRs were reported, 21 by the patient and five by the doctor. However, the
Table 2. Nature of adverse drug reactions reported by patient or doctor in the medical clinic (ADRs occurred in different patients except those marked by an asterisk which occurred in the same patient).

| ADR reported by patient and not by doctor | ADR reported by doctor and not by patient | ADR reported by both patient and doctor |
|------------------------------------------|------------------------------------------|---------------------------------------|
| Penicillin: allergic                      | Diazide and ibuprofen: renal impairment  | Carbimazole: sore throat               |
| Arthritis tablets: upset hiatus hernia    | Digoxin: toxicity (vomiting)             | Tetracycline: rash                     |
| Aspirin: internal bleeding                | Carbimazole: sore throat                 | Amiodarone: toxicity                  |
| Sleeping tablets: headache                | Warfarin: over-anticoagulated            | Carbamazepine: drowsiness             |
| Steroids: weight gain                     | Penicillin: allergy                      | Prazosin: hypotension                 |
| Co-proxamol: dizziness                    | Isosorbide dinitrate: headache          | Carbamazepine: ataxia and double vision|
| Phenothiazines: involuntary movements     | Steroids: cushingoid features and        | Ibuprofen, GTN and paracetamol:        |
| Naproxen and aspirin: indigestion         | osteoporosis                             | angioedema                            |
| Buprenorphine: vomiting                   | Penicillin: rash                         | Carbimazole: sore throat and rash      |
| Isosorbide dinitrate: headache            | Aspirin: indigestion                     | Naproxen: dyspepsia                    |
| Atenolol: dizziness                       | Warfarin: gastro-intestinal haemorrhage* | Penicillin: allergy                    |
| Carbamazepine: drowsiness                 | Aspirin: epigastric pain*                | Insulin: hypoglycaemia                 |
| Nifedipine: flushing                      | Carbimazole: rash                        |                                      |
| Antibiotic: diarrhoea                     | Penicillin: allergic                     |                                      |
| Digoxin: nausea and visual disturbance    | Insulin: hypoglycaemia                   |                                      |
| Isosorbide dinitrate: headache            | GTN: headache                            |                                      |
| Disodium etidronate: diarrhoea            | Penicillin: allergic                     |                                      |
| Amoxycillin: rash                         | Contrast medium: allergy                 |                                      |
| Ibuprofen: indigestion                    | Penicillin: allergy                      |                                      |
| Anti-hypertensive: dizziness and headache | Bendrofluazide: rash                     |                                      |
| Penicillin: allergy                       | Sulphasalazine: nausea                   |                                      |
| Nifedipine: flushing                      | Naproxen: dyspepsia                      |                                      |
| Penicillamine: loss of taste              | Amoxycillin: rash                        |                                      |
| Salbutamol: tremor                        | Penicillin: allergy                      |                                      |
| Aspirin: indigestion                      | Amitriptyline: headache                  |                                      |
| Arthritis tablets: nausea                 | Penicillin: allergy                      |                                      |
| Methyl dopa: lethargy and depression      | Insulin: hypoglycaemia                   |                                      |
| Propranolol: nightmares                   | Penicillin: allergy                      |                                      |
|                                      | Indomethacin: oedema                     |                                      |
|                                      | Penicillin: allergy                      |                                      |
|                                      | Atenolol: oedema                         |                                      |

*Occurred in the same patient.

doctor and patient agreed in only two cases. The nature of the ADRs reported was varied but included three separate reports of ‘internal bleeding’, nose bleeds and bruising, attributed to warfarin by the patients. None of these ADRs was reported by the doctors.

The level of the patients’ knowledge of possible side effects of their treatment was low. Five patients reported that they knew of the risks of bleeding or bruising with warfarin. A further eight patients reported that they knew that they should not take aspirin with their treatment. The remaining 90 patients knew of no risks of their treatment.

A small number of patients had obtained information about their treatment from a source other than a doctor; two patients had gained information from the clinic nurse and one patient had heard information on the radio.

Seventy-four per cent of patients felt they knew enough about the reasons for their treatment; 36 per cent would have liked to have known more. Forty-three per cent felt they knew enough about possible side effects of their treatment; 56 per cent would have liked more information.

**Discussion**

The patients’ knowledge of the drugs they were taking was poor but no more so than that of their doctors. The doctors’ poor level of awareness of the medicines their patients were taking was similar to that reported previously [1].

There was little agreement between doctors and patients regarding previous ADRs. The reasons for this are unclear but might include patients’ forgetfulness of their past medical history or the doctor’s failure to inform
the patient that a particular clinical event had been drug induced. Lack of knowledge of a previous ADR by either the patient or the doctor might have resulted in a serious medical mishap. The present study shows that a drug history obtained solely from either the patient or the medical notes is likely to be incomplete. In a recent inpatient study of general medical patients 12 per cent had no record in their notes as to whether they had been asked if they had experienced a previous ADR [4].

In order to improve the recording of the patients’ treatment and ADR history, patient-held treatment cards could be used. Patients might bring these cards with them at every attendance at the hospital clinic or at the general practitioner’s surgery or when having a prescription filled at a pharmacy. The pharmacist, whenever a new treatment is prescribed, would add the name, dose and frequency of medication (as prescribed) to the patient’s treatment card. Any doctor recognising an ADR in a patient would add this information to the card. The production of the card for completion each time a prescription was dispensed, would ensure that the problems of outdated information which currently occur when treatment cards are used, would be avoided. It would no longer be necessary to ask patients to bring all their medications to each clinic, a request which, in any case, is often ignored, or may result in one or more large bags of drugs (both current and outdated) being brought for inspection. The recording of previous ADRs would be a major advantage offered by this system.

The degree of ignorance of the possible dangerous side effects of drugs such as warfarin amongst patients taking these drugs is extremely worrying. The study in the anticoagulant clinic was conducted to establish whether the findings concerning warfarin therapy in patients attending a general medical clinic applied generally. All patients taking warfarin were documented in the medical records as having been warned of the risks of bleeding and bruising and all had been issued with a standard booklet advising them of the risks of their treatment. Evidently neither form of communication was adequate. It is known that verbal information alone delivered in the stressful environment of a doctor’s clinic or surgery results in a low level of retention by the patient [7]. Nevertheless, of the 48 per cent of patients in the present study who recognised that their knowledge of possible ADRs was inadequate, 25 per cent did not wish to know more.

Information for patients should be brief, clear and understandable. Perhaps this could best be done using cartoons (Fig. 2), since at least one million adults in the United Kingdom have a reading age of less than nine years and thus are unable to read simple forms, pamphlets or the Highway Code [8]. The APBI have suggested that information for patients about their drug therapy should be ‘as comprehensive as is consistent with the objective of it remaining understandable’ [2]. However, in view of the low level of literacy in adults [8], and the varied levels of comprehension and interest in drug therapy found in the present study, it seems unlikely that the plan to include detailed written information with all prescribed medicines may do little other than align the activities of the pharmaceutical industry in this country with those of their commercial colleagues in the rest of the EEC. The current role of pharmacists in providing drug information to patients might be amplified. A closer liaison between pharmacists and prescribing doctors would improve the quality of information regarding a patient’s treatment.

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