

PRACTICE OBSERVED

Practice Research

Doctors' unawareness of the drugs their patients are taking: a major cause of overprescribing?

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Abstract

We studied the accuracy of both hospital and general practitioners' records of current drug treatment in consecutive patients who attended a general medical review clinic. Either the hospital or the general practitioner's records (obtained in a questionnaire), or both, were inaccurate for over 70% of 59 patients interviewed with their medicine. Most of the errors were due to patients taking drugs in addition to those shown in their records. Some of these were inappropriate, and many seemed unnecessary. It appears that neither hospital doctors nor general practitioners are fully aware which drugs their patients are taking, and this may contribute to overprescribing. It is believed that considerable financial savings might be made if patients brought all their medicines to every consultation.

Introduction

It is widely, but not universally, believed that patient non-compliance with drug treatment is one of the most important problems in clinical practice. If doctors do not know all the drugs that have been prescribed for their patients assessing and improving compliance is more difficult, and additional prescribing puts patients at risk of suffering the consequence of unsuspected drug interactions. Hospital doctors rely on hospital records as their main source of information about drug treatment for outpatients. In a recent study, we showed that for patients who are taking three or more drugs this information is usually inaccurate. We wondered if

general practitioners' records of current treatment were more accurate. Therefore, we undertook a further study to examine the accuracy of both the hospital and the general practitioner's records of drug treatment in a series of consecutive patients who attended a general medical clinic for review.

Patients and Methods

One hundred and eighteen consecutive patients who attended our department's general medical clinic were studied. There were 60 men and 58 women. Their mean age was 61 years, range 14-93, and 55 patients were 65 or over. They had the usual wide range of conditions of patients attending such a clinic.

Initially, the patients' current medication, according to their hospital notes, was recorded. A drug history was then taken from each patient and their general practitioners were sent a questionnaire asking for their version of the current drug regimen. Patients who needed to be seen again for medical reasons were asked to bring all their medicines, and a reminder of this was recorded on their appointment cards. At the next visit they were interviewed with their medicines. Allowing for any changes made at the first visit, or by the general practitioner between those two visits, the version of the drug regimen given in the hospital notes and the version recorded by the general practitioners in the questionnaire were compared with the "final" version obtained by interviewing the patients with their medicines.

Results

Of the 118 patients interviewed initially, 10 (8%) were taking no medication and 58 (49%) were taking three or more drugs. Eighty patients were asked to make a further clinic visit with their medicines. 59 did so and the remainder either failed to attend or forgot to bring their medicines. Hospital records—The version of the drug regimen given in the hospital notes differed from the final version obtained by interviewing the patients with their medicines for 45 (76%) patients. Most of the discrepancies were due to patients taking drugs in addition to those shown in their hospital records. Twenty six (44%) patients were taking one or more additional drugs table. Without their medicines few patients could accurately describe their drug treatment. Of a total of 47 additional drugs being taken by 26 patients, the drug history showed only 20 (43%). For more than one patient in 10 there

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Informing the hospital of patients' drug regimens

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Abstract

Patients who are admitted to Southampton Eye Hospital are asked to bring a form from their general practitioner with details of all drugs that have been prescribed and to bring all their current medications. We carried out a study to find out what proportion of patients were taking medicines by prescription only and how many of these were known to the general practitioner. Less than half of the forms completed by the general practitioners were correct.

Introduction

The general practitioner has many important roles in patient care. One of these is ensuring that the details of the drugs that patients take are known to hospital colleagues when admission to hospital becomes necessary. We carried out a prospective study to discover how accurately such information was relayed to Southampton Eye Hospital when patients were admitted for elective surgery.

Before admission patients are asked to consult their general practitioner and request that he or she completes a form supplied by the hospital, which specifically asks that all drugs that have been prescribed should be notified. The patients are asked to bring both the form and all current medication to the hospital. This practice is known to be widespread in the United Kingdom. We wished to know what proportion of patients were receiving prescription only medicines, and how many patients were taking these unknown to their general practitioner.

Patients and results

One hundred consecutive adults who were admitted for elective procedures were studied. Patients who did not have a completed form from their general practitioner were excluded. All patients were interviewed and their current treatment compared with that notified by their general practitioner. Where discrepancies occurred the number of prescribed medicines being taken was noted to see if errors occurred more often for those taking the greatest number of prescription only medicines. A further 100 forms were scrutinized for evidence such as different ink that they had been completed by more than one person—for example, a receptionist and a general practitioner.

The sample of patients consisted of 46 men and 54 women. The mean age was 50.2 years (86.4 for men and 73.5 for women). Seventy six patients, 32 men and 44 women, were taking medicines by prescription only. These included diuretics (48.7%), cardiac or hypertensive medication (40.0%), drugs for night sedation (31%), non-steroidal anti-inflammatory drugs (15.8%), hypoglycaemic agents (13.1%), and psychotropic drugs (10.5%). No patient was taking more than 10 different medicines. Sixty six (87.5%) were taking four or more drugs. Of the 76 patients who were taking prescription only medicine, the general practitioner's drug form agreed with the patient in 36 (47.4%) cases.

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Among the remaining 40, 35 patients were taking prescription only medicines that were not notified by their general practitioner, four were not taking prescribed medicines although these were notified, and one had a combination of discrepancies. The table lists the types of drug. The discrepancies occurred most frequently when three, four, or five medicines had been prescribed. Analysis of 100 forms showed that 21 had obviously been completed by more than one person.

Types of prescription only medicine and number of discrepancies between patient's and general practitioner's drug forms in 76 patients

Table with 2 columns: Type of prescribed medicine, No of discrepancies between patient's and general practitioner's forms. Rows include For glaucoma (11), Non-steroidal anti-inflammatory drug (8), For night sedation (5), Antibiotics (4), For asthma (4), Cardiac drug (3), Other (17).

Discussion

A search has failed to find any similar British studies of discrepancies between what drugs patients are taking and their doctors' records. The results of studies in the United States show that such discrepancies occur in hospital practice, although the discrepancy rates (34% and 28%) are lower than in this study. Our patients were mainly elderly, as at other eye hospitals. This partly explains why three quarters were taking prescription only medicines. Fewer men (69.5%) than women (81.5%) were taking such medicines, probably because of their lower mean age.

That fewer than half of the drug forms completed by general practitioners were correct is cause for concern, particularly since cardiac drugs were included. We also noted that for 13 of 17 patients with glaucoma the correct treatment was not reported. It is not clear why the discrepancies occurred, although it may be relevant that a fifth of the forms had been completed by more than one person. In this group of elderly patients some discrepancies may have been due to misunderstandings because of their age. Our data do not suggest that discrepancies occurred more often for patients who were taking the greatest number of prescription only medicines. All doctors need to be aware of the limitations of the system that we have described.

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was a major error in drug treatment or omission in the hospital records. For example, five patients were taking beta blockers without our knowledge, two of them had asthma. Other drugs being taken without our knowledge included digoxin, two patients, clonidine, and sodium valproate. General practitioners—Forty six questionnaires were received from 38 general practitioners concerning the 59 patients interviewed with their medicines. The drug regimen given in the questionnaire differed from the version obtained by interviewing the patients with their medicines for 32 (70%) patients. Twenty one (46%) patients were taking drugs in addition to those shown in their general practitioner's records (table).

Common discrepancies between patients and patients with their medicines

Table with 2 columns: Hospital records, General practitioners' records. Rows include Taking additional drugs (20, 44), Not taking drug recorded in their notes (12, 26), Inappropriate drugs (12, 20), Total No. of patients with one or more errors (49, 70).

Some of the drugs being taken in addition to those in the patients' records. Rows include Propranolol and salbutamol (9, 1), Nifedipine (9, 1), Beta blockers (1, 1), Digoxin (1, 1), Non-steroidal anti-inflammatory drugs (4, 1), Laxatives (4, 1), Nitroglycerin (3, 1), Bile acid binders (1, 4).

Discussion

We believe that owing to poor record keeping and excessive prescribing both hospital doctors and general practitioners often do not know which drugs their patients are taking. It might be argued that the inadequacies that we have shown in the hospital records have relevance only to our own department. The finding of frequent omissions in the records of 38 general practitioners, however, suggests that the problem is widespread. Many of the problems of inaccurate records arise from the dual system of outpatient care that exists in Britain. Hospital doctors usually inform general practitioners when they alter a patient's medication but general practitioners do not usually inform hospitals when they make changes. This resulted in some "major" and many "minor" omissions in the hospital notes. For example, four questionnaires were received from general practitioners concerning the five patients (two of whom had asthma) who were taking beta blockers without our knowledge, and in all four patients the beta blocker was being prescribed by the general practitioner. The more common errors in the hospital records were due to patients taking tranquillisers, non-steroidal anti-inflammatory drugs, minor analgesics, or laxatives without these being recorded in the notes. These might not be considered serious omissions, but they increase the chances of unsuspected drug interactions, and we think that many of these drugs were being prescribed unnecessarily.

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the clinic? Though we recognise that non-compliance may be greater among the patients who failed to bring their medicines, it seems that poor records of drug treatment and excessive prescribing are at least as important as patient non-compliance among hospital outpatients.

Many of the "additional" drugs being taken by the patients whom we studied are included in the recent limited list of drugs available for prescription on the National Health Service or are likely to be included in any extension of the list. Introducing such a list, however, may not greatly reduce the problem of overprescribing, which in our experience is as common in younger patients with chronic illnesses as it is in elderly patients. Excessive prescribing may be costing the Health Service much more than the use of expensive drugs such as those excluded from the limited list. We suggest that the availability of more accurate information about patients' drug treatment would help to reduce unnecessary prescribing, as doctors would be discouraged from additional prescribing if they knew that the patient was already taking several drugs. Patients who are known to be on multiple drug treatment were, not surprisingly, especially likely to have the number of drugs they were taking underestimated in the hospital notes. Seventeen (29%) of the 59 patients interviewed with their medicines were taking four or more drugs, but in only three (18%) of these did the hospital notes correctly show all their drugs. Unfortunately, taking a drug history in the absence of the patients' tablets is no substitute for accurate records. Both we and others have shown that many patients cannot accurately describe their medication.

More accurate records of current treatment might be achieved by having a computerised database which could be accessed and updated by both general practitioners and hospital doctors. Although the technology for this already exists, in the present financial climate such a system is unlikely to become generally available in the near future. For the present a practical alternative is for all patients to carry a card recording their current treatment. When we encounter patients with cards recording their medication issued by a particular clinic or practice we find them of limited usefulness because they are often not kept up to date. It is important therefore that a card system should be uniformly accepted. With such a system it would be the responsibility of the general practitioner, the hospital doctor, and perhaps, more importantly, the patient to ensure it is kept up to date.

In the meantime the best method of finding out what drugs patients are taking is probably to ask them to bring all their medicines at each visit to the doctor. Although some of our patients failed to bring their medicines, we believe that if this were standard practice throughout the Health Service fewer patients would forget. Doctors being reminded of the drugs that their patients are taking should encourage rational prescribing and the discontinuation of unnecessary treatments. The financial savings could be considerable.

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Can the prevalence of disease risk factors be assessed from general practice records?

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Abstract

The result of an audit of the recording of smoking habit, alcohol consumption, blood pressure level, diet, exercise, height, weight, and occupation in patients in five general practices is reported. This audit was the first phase of a study to assess the feasibility of the exchange of information between general practice and a district health authority. The frequency with which each item was recorded varied from 3% (exercise) to 65% (blood pressure). The prevalence of risk factors for disease in the community.

Introduction

The preventive work of general practitioners is restricted primarily to reducing the risk of disease in the individual. For example, to prevent disease caused by smoking each patient is asked about his or her smoking habit and if necessary is given the appropriate help and advice to stop. The district community physician, on the other hand, has the different responsibility of reducing the risk of disease in the population as a whole. Although this must include supporting general practitioners in their work with individual patients, it also requires input to other organisations and institutions in the community. Health education programmes in schools, the provision of no smoking areas in public places, and the cooperation of the local media are all important elements in reducing the risk of disease in the population.

To assess the impact of action at a district level it is necessary to monitor the prevalence of risk factors for disease—such as smoking—in the community. One approach is to conduct a random survey of the population from time to time. The obvious alternative is to ask for the cooperation of general practitioners who already record the presence or absence of risk behaviour in their patient notes as part of their preventive work with the individual.

This is only one of several activities in which general practitioners and departments of community medicine can cooperate, and this study is the first phase of a project to assess the possibility of a two way exchange of information in Aylesbury Vale Health District. The second phase—the evaluation of a surveillance system based on "splitter patients" who are identified by random selection from each practice's list of patients and surveyed at surgery attendance with a self administered questionnaire—is still in progress and is not reported here.

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Method

The study was set up with the cooperation of five general practices with an aggregate list size of 44 000 patients, representing nearly 10% of the total population of the district. The criteria for selection were predominantly geographical: one practice was recruited from each of the main centres of population in the south of the district. Nevertheless, the practices are not representative: they are all large group practices based on health centres, and three of the five are training practices for general practitioners.

The audit was restricted to patients aged between 25 and 64 years. A random sample of 2000 patients was drawn, 400 from each practice. Each patient was selected from an age-sex register; the appropriate sampling rate was calculated and the records selected from the card index at this interval and within the appropriate age group. If the medical records of patients who were identified are all large group practices based on health centres, and three of the five are training practices for general practitioners. The audit was restricted to patients aged between 25 and 64 years. A random sample of 2000 patients was drawn, 400 from each practice. Each patient was selected from an age-sex register; the appropriate sampling rate was calculated and the records selected from the card index at this interval and within the appropriate age group. If the medical records of patients who were identified are all large group practices based on health centres, and three of the five are training practices for general practitioners. The audit was restricted to patients aged between 25 and 64 years. A random sample of 2000 patients was drawn, 400 from each practice. Each patient was selected from an age-sex register; the appropriate sampling rate was calculated and the records selected from the card index at this interval and within the appropriate age group. If the medical records of patients who were identified are all large group practices based on health centres, and three of the five are training practices for general practitioners. One practice effectively operated as two units from different surgeries, and in this case 200 notes were drawn from each surgery and the results from each unit were considered separately in the analysis. A coding sheet was completed for each patient, and each auditor was instructed in its use by the study coordinator. Written notes on how to complete the audit form were also given with instructions to refer any problem which lay outside the guidelines to the coordinator. The height of the patient and the most recent occupation were recorded irrespective of the date on which they were entered in the notes (in most cases the entry was not dated). All other items were recorded only if an entry had been made in the notes between 1 January 1980 and 31 December 1984. If there was more than one entry the most recent during the study period was taken. If there were no entries in the notes during the study period this was also recorded. No account was taken of how long the patient had been registered with the practice: periods spent with other practices were included in both numerator and denominator. The other items that were audited were accepted as recorded on the following criteria: (i) smoking habit—any reference; (ii) alcohol consumption—any reference to amount drunk; (iii) height and weight—only numerical values; (iv) blood pressure—a numerical record; (v) exercise—any reference to the extent of, or need for, exercise; and (vi) diet—any record of dietary habit or advice.

Coding of social class was done by the project coordinator from the information entered on the audit forms. In many cases this was inadequate owing to the absence of information on employment status—that is, employed or self employed, and employed whether manager or supervisor. Thus the arbitrary rule was adopted of recording the social class that is appropriate to an employed worker in a non-supervisory capacity. Again, where ambiguity existed about the job description the most common of the occupational options was adopted—that is, it was assumed that "barman" implied a pub and a locomotive worker. We therefore emphasise that the social class analysis used is an approximation and was adopted only for comparison within the study. Confidence intervals were calculated on the basis of the standard error of a proportion.

RESULTS

In table 1 the overall level of recording in the patient notes for all items, except occupation and height, is expressed as a percentage of possible recordings. Confidence intervals at 95% are not given but are less than 5% for all estimates. The 8% of patients who had not presented during the five year study period are excluded. Although the aggregate recording levels for smoking and blood pressure are 59% and 65% respectively, the range of values (in a group of practices committed to this activity) remains wide. Records of smoking habits were invariably associated with quantitative measures of consumption. In the case of alcohol consumption just over three quarters of records gave sufficient detail to allow coding of intake in units per week. Recording of diet was almost exclusively in terms of advice given