PRACTICE OBSERVED

Practising Prevention

Helping agencies

SIMON A SMAIL

Although many programmes of preventive care can be put into effect using resources drawn solely from within the practice there are several other agencies whose help may be invaluable and who may contribute considerably to the success of preventive care.

Local agencies

HEALTH AUTHORITY SERVICES

Health authorities are concerned to ensure that there is an adequate level of preventive care in their areas, but an effective overall strategy in an area demands close co-operation between the community services provided by the authority and general practitioners. Health authorities often take responsibility for preventive care for certain groups of patients and may, for example, provide paediatric screening and immunisation clinics, family planning clinics, and cervical cytology clinics. Local practice and deployment of resources varies from one authority to another, but it is vital that there is good communication between those who are responsible for running the clinical services of the authority and local practitioners to avoid obvious gaps in the provision of preventive care or, on the other hand, unnecessary duplication of effort. Many community medicine specialists are now more sensitive to the potential for practising preventive care in the practice, since it is often more logical for activities such as immunisation, antenatal care, family planning, and cervical cytology to be provided by the practitioner. Community medicine specialists will be able to provide practitioners with advice about local epidemiology but also can often give specific advice about the practicalities of initiating a preventive programme, such as a screening programme for hypertension.

Carrying out a programme of preventive care in a practice will often require the services of district nurses, health visitors, and midwives, who are employed by the health authority. If a practice is planning a new initiative it is important to discuss the plans not only with the nursing staff but also with the nursing officer. There may be the need for resources, but often a need for further training as well. For example, if a treatment-room sister is to help to run an immunisation clinic the health authority will need to be satisfied that the nurse is competent to undertake the additional tasks. Usually the specialist in community medicine will be able to advise if any problems arise.

HEALTH EDUCATION OFFICER

Virtually all health authorities now have the services of at least one full-time health education officer (HEO). He or she is responsible for co-ordinating health education services in the area or district and for providing advice and resources. Many HEOs have a background in nursing or health visiting and some in education. About a third of all HEOs have undertaken further training and hold the diploma in health education. Most are likely to hold this diploma in the future.

The HEO can provide a most important service for practitioners. He routinely keeps health visitors fully informed about local health education plans and about new initiatives, but he will always be willing to provide direct advice to practitioners. He holds stocks of health education material, ranging from displays and posters to films and film strips suitable for different audiences. Most health education units stock the full range of pamphlets from the Health Education Council and Scottish Health Education Group and often many others as well, including material produced locally. Some units have the services of a graphic artist or audiovisual technician and will lend slide or film projectors.

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PATIENT GROUPS

Some practices have now set up patient participation groups, which can supply a valuable framework for a preventive campaign. The group itself may help to run the campaign and organise meetings of patients. In some areas Community Health Councils have become interested in preventive care and run co-ordinated local campaigns. Some CHCs have taken a particular interest in tertiary prevention (managing established disease) by seeking out and publicising facilities for patients with chronic disease and disability. Other local groups may also be helpful. Mother and baby groups are often attended by the health visitor who may be able to influence the health beliefs of those attending the group, but subsequently individual members of the group may have a more general effect by disseminating ideas of preventive care in the community.

Although there has been a history of difficult relationships between some self-help groups and the medical profession there is no doubt that many self-help groups, such as branches of the Eczema Society, British Diabetic Association, British Epilepsy Association, Alcoholics Anonymous, or weight control groups, can be invaluable for many patients and can supplement the efforts of the practitioner in both secondary (early detection of disease) and tertiary prevention.

LOCAL AUTHORITY

The local authority must also be seen as an important resource. The education department is responsible for health education in schools and may welcome advice from local health visitors or doctors. Adult education programmes always include keep fit classes of various kinds. Patients can often be encouraged to take a little more exercise by joining a keep fit class, but other classes that aim to teach new hobbies may also be valuable in helping patients to find new interests. Cooking classes may even help people to learn something about nutrition. Recently some local authorities have started to run classes that are based on the successful Health Education Council campaign "Look After Yourself" and include straightforward advice about diet and exercise.

Social services departments are responsible for running day centres for elderly people and in England and Wales employ occupational therapists—both of importance in tertiary prevention. They also have details of local self-help groups.

LOCAL MEDIA

Local newspapers often run features or series on aspects of preventive care. This may stimulate local interest that a practice can use to advantage. Editors always welcome ideas, and practitioners can often act as a resource themselves, either by writing for the newspaper or by providing material or ideas for a features writer. Local radio also has a considerable impact and many practitioners act as the popular local "radio doc." Although listeners may not remember a great deal of specific information given in radio chat programmes they do respond to the general tone of the programme. Producers always like doctors to discuss the latest headline-catching miracle cure, but most radio doctors manage to temper their producers' enthusiasm and include regular preventive advice in their programmes.

National agencies

CENTRAL INFORMATION SERVICE FOUNDATION

An information service is available free of charge to all practitioners in Britain and provides information and advice about all aspects of practice management. For example, practitioners may obtain advice about setting up an age/sex register, a recall register, or a morbidity register—any of which may be valuable in providing preventive care in the practice.

HEALTH EDUCATION COUNCIL
SCOTTISH HEALTH EDUCATION GROUP

Both the HEC and SHEG have similar functions as central co-ordinating bodies for health education activities. They publish leaflets and pamphlets, many of which are co-ordinated with national campaigns. Some are now specifically designed for general practice—for example, the Give Up Smoking kit. The HEC also has a resources centre, which consists of a lending library and a collection of health education material including audiovisual aids and facilities for viewing. A bibliographic service is also available.

VOLUNTARY ORGANISATIONS

Many charitable bodies produce educational material for patients with chronic disease—for example, the British Diabetic Association and the British Epilepsy Association produce excellent pamphlets. Some charities also produce leaflets and audiovisual aids that can be used when giving talks in the practice, in school, and in youth clubs, for instance. Many of these are of a general nature and not necessarily linked to specific disease. A comprehensive index of this material is published biannually,[1] and a full list of charitable organisations concerned in health care is available from the Family Welfare Association.

Useful addresses

BMA BLAT Film Library
BMA House
Tavistock Square
London WC1H 9JP
Tel: 01-387-4499

Central Information Service Foundation
14 Princes Gate
London SW7 1PU
Tel: 01-581-3232

Family Planning Information Service
St Andrew's House
27-35 Mortimer Street
London W1N 7RJ
Tel: 01-636-7866

Family Welfare Association
(publishes *Charities Digest*)
501-505 Kingsland Road
Dalston
London E8 4AV
Tel: 01-254-6251

Health Education Council
78 New Oxford Street
(Resources Centre, 71-75 New Oxford Street)
London WC1A 1AH
Tel: 01-637-1881

Scottish Health Education Group
Woodburn House
Canaan Lane
Edinburgh EH10 4SG
Tel: 031-447-8044

Reference

1 Anonymous. *Health education index and guide to voluntary agencies*. London: B Edsall and Co, 1980.

Practice Research

Drug treatment in elderly patients: GP audit

CEDRICK R MARTYS

The percentage of elderly people in the population is growing; more than 14%, are aged 65 years and over.[1] Half of these people may be on drug treatment.[2 3] In one survey of elderly inpatients[3] the average number of drugs prescribed was 3·3. Older patients are at greater risk than younger people from polypharmacy, drug interactions, and adverse effects of drugs.[4-6] Most reported work, however, is based on studies and experience in hospital.[7] As a step towards identifying problems associated with drug treatment of elderly patients in the community I studied patients in my practice. I aimed at identifying all patients in the practice who were over the age of 65 and were on long-term drug treatment (long-term being defined as treatment of more than one month's duration), and to review each patient's treatment regimen for potential drug interactions and adverse effects and to correct this when required.

Method

All patients over the age of 65 who were on drug treatment were identified from the age-sex register and the prescription record card that is inserted in the medical records of every patient in the practice who is on long-term treatment. Each of these patients was interviewed over six months, either during attendance at surgery or on a home visit, and questioned about his or her treatment. Symptoms complained of at the time of the interview were recorded on a data sheet together with details of drug and dosage regimens, including self-treatment. Patients were also asked if they had taken their drugs as recommended.

After patients were given an opportunity to state in their own words whether they had developed any new or unexpected symptoms since starting treatment a checklist of specific symptoms was then gone through. Information was particularly required concerning symptoms that might be drug-induced, and though the use of checklists has been criticised on account of suggestibility they have been successfully used in several surveys.[8 9]

All of the interviewing was done by a drug monitor, who is a State-registered nurse and health visitor employed by the practice and trained by me in techniques of drug monitoring. She interviewed each patient once only, and after explaining the study to the patient completed the data sheet. A blood sample was taken for full blood count, to estimate urea and electrolyte concentrations, and when appropriate to estimate serum digoxin concentrations.

Results

In a practice population of 3300 patients 538 (16%) were over the age of 65 years at the start of the survey, and 167 patients (31%) had been taking at least one drug for more than a month (table I). The average number of drugs taken was 3·2, but 61 patients (36%, of those on treatment) were taking four or more (figure). Of the 167 patients on drug treatment, 137 (80%) thought that they were taking their drugs as prescribed. The remaining 20%, were either confused over multiple drug treatment or had deliberately reduced the dosage for no clear reason. Occasionally side effects were cited as the cause of non-compliance, but the patients with side effects usually had only a hazy recollection of how long they had been suffering from them.

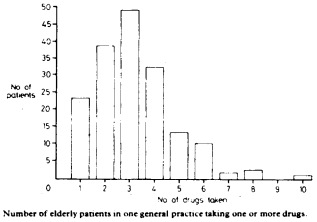
Sixty-one patients (36%) were thought to have a possible drug-related symptom or sign, including dyspepsia, dizzyness, confusion, tremor, and paraesthesiae (table II). Eighty-four (50%) were taking a diuretic (table III), and 67 (80%) of these were also taking a slow-release potassium supplement. Although 22 patients who were taking a diuretic had a serum potassium concentration below 3·5 mmol (mEq)/l (the lower limit of the normal range of the local laboratory), only one patient had a concentration (2·7 mmol(mEq)/l) that was considered to be seriously below normal. All samples for estimation of serum potassium concentrations were delivered to the laboratory within four hours of collection.

Twenty-two patients (13%) were taking digoxin. The results of laboratory measurement on samples taken between four and six hours after the last dose showed that three patients had a serum concentration of digoxin that was above the normal therapeutic range of 0·8-2·0 µg/l, and three were below. Six patients on oral corticosteroid and anti-inflammatory drugs had mild iron deficiency anaemia, which may have been caused by increased occult blood loss from the bowel as a result of drug treatment.

There was evidence of impaired renal function in 61 patients (36%) with raised blood urea concentrations, and 55 (33%) had impaired creatinine clearance. Many of these patients were taking digoxin, diuretics, slow-release potassium, and analgesics, all of which are excreted by the kidney, and thus were at greater risk from drug toxicity owing to abnormally high blood concentrations because of impaired renal excretion of these drugs.

TABLE I—*Patients over 65 years of age on drug treatment*

	No patients over 65 years of age	No (%) taking one or more drugs
Men	218	70 (32)
Women	320	97 (30)
Total	538	167 (31)



Number of elderly patients in one general practice taking one or more drugs.

TABLE II—*Symptoms and signs that were potentially drug-related*

Symptom/sign	No of patients (total=61)	Drug treatment	No of patients
Dyspepsia/flatulence	11	Prednisolone	5
		Indomethacin	1
		Naproxen	2
		Ibuprofen	1
		BC powder	1
		Dextropropoxyphene	1
Dry mouth	20	Bendrofluazide	10
		Frusemide	6
		Bumetanide	4
Constipation	2	Bendrofluazide	1
		Paramol 118	1
Dizzyness/fainting	10	Propranolol	4
		Bethanidine	2
		Methyldopa	3
		Paramol 118	1
Tremor	7	Bendrofluazide	2
		Salbutamol	3
		Chlordiazepoxide	2
		Glyceryl trinitrate	2
		Propranolol	2
Headache	4	Salbutamol	1
		Diazepam	2
Paraesthesiae	1	Dextropropoxyphene	1
Drowsiness	2	Diazepam	2
Confusion	2	Sodium amytal	1
		Dextropropoxyphene	1
Depression	2	Diazepam	1

TABLE III—*Diuretic treatment and serum potassium concentrations in 84 patients*

		Low K (<3·5 mmol(mEq)/l)		
Diuretic	Normal K	Diuretic + K	Diuretic alone	Not on diuretic
Bendrofluazide	23	12	8	—
Frusemide	25	1	1	—
Other	14	0	0	—
Total No	62/74	13/15	9/11	1/(—)

Discussion

Fourteen per cent of the British population are now aged over 65 and account for 33% of national expenditure on drugs.[1 6] Some prescribing for elderly people may be unnecessary, ineffective, or inappropriate,[10 11] and they are particularly at risk from both adverse effects of drugs and polypharmacy.[12] My survey identified many prescribing problems and suspected adverse effects.

Drug-induced symptoms—Thirty-six per cent of patients were "certainly" or "probably"[13] suffering from symptoms that were drug-induced. This is higher than the 15% reported for suspected iatrogenic disease in elderly patients in hospital,[4] but comparable figures are not available from other general practices. Although most drug-related symptoms were mild serious potential problems were identified, such as postural hypotension in patients taking methyldopa and bethanidine, and effects on the central nervous system in patients taking diazepam and dextropropoxyphene. The last two drugs were discontinued and the side effects disappeared. Effects on posture due to antihypertensive drugs were alleviated by either changing the treatment regimen or reducing the dosage. Patients with dyspepsia who were taking potent anti-inflammatory drugs were changed to drugs less likely to cause gastrointestinal side effects. In some patients it was necessary to continue treatment with prednisolone but they were given enteric-coated preparations, and oral anti-inflammatory drugs were discontinued in those who had to take prednisolone long term.

Potassium—No life-threatening adverse effects owing to abnormal potassium concentrations in patients taking diuretics were detected. These are rare even among hospital inpatients,[14] where hyperkalaemia and hypokalemia are most frequently the cause. Hypokalaemia was detected in 26% of patients in the survey, but it is doubtful if this needs to be corrected unless the serum concentration falls below 3·0 mmol(mEq)/l.[15] Potassium supplements were of little benefit to patients taking diuretics.[16] Although severe hypokalaemia (3·0 mmol(mEq)/l) can potentiate digoxin toxicity it is unlikely that mild hypokalaemia is harmful.[17] Thus, potassium supplements have been discontinued in all elderly patients who take thiazide diuretics and also in those who have evidence of impaired renal function. But patients who take the more potent loop diuretics, such as frusemide, and have good renal function continue to take potassium replacement treatment.

Digoxin—None of the patients taking digoxin had clinically important adverse effects. Of the three patients with drug concentrations above the accepted therapeutic range, adjusting the dosage resulted in a reduced drug concentration to normal at a second estimation. Digoxin was discontinued in patients whose concentrations were below the therapeutic range with no apparent ill effect. Estimations of serum digoxin concentrations are useful to determine the optimum therapeutic dose in general practice and to monitor patient compliance.[18] In most instances when the patient is taking the drug but serum concentrations are below the accepted range discontinuing treatment produces no ill effects.[18 19]

Anti-inflammatory drugs—When anaemia was found in patients taking oral corticosteroids and other anti-inflammatory drugs an attempt was made to change to preparations less likely to increase occult blood loss from the bowel. It was difficult, however, to discontinue prednisolone treatment. In most cases this had been introduced many years before to treat rheumatoid arthritis, and I thought that it was better to leave patients on this drug (all five so affected were taking 10 mg or less daily) and to introduce regular blood film examinations than to reduce the dose gradually to nil and risk an exacerbation of their arthritis. They were prescribed an enteric-coated preparation.

Survey—There were problems in interpreting the symptom checklist on the data sheet that was completed for each patient. Elderly patients often have multiple symptomatology and pathology, and most symptoms elicited were thought to be a result of the patient's illness rather than of treatment. Only symptoms that were thought to be certainly or probably drug-induced were identified as adverse effects, according to current definitions.[13] Undoubtedly some symptoms that were not drug-related were classified as such, and, more seriously, some drug-related symptoms may have been overlooked, especially if they were not on the checklist. But this method of intensive surveillance is more likely to produce a much more comprehensive picture of ill health due to drugs in elderly patients on long-term treatment than a method that relies on spontaneous, voluntary reporting, which is invariably incomplete and haphazard.

The patients generally welcomed the survey. They appreciated the interest shown in their complaints and their treatment, and in every case agreed to provide a blood sample when the reasons were explained. The drug monitor spent on average 30 minutes with each patient and often had to travel several miles on home visits in this semirural practice. Many individual prescribing problems were identified and corrected. We have learnt something of the problem of drug-related disease in elderly patients in our practice and have arranged for regular follow-up of patients on long-term treatment by the doctor or the nurse at six-monthly intervals or less. This must represent an improved standard of care for the patients concerned.

Conclusions

In a semirural practice every patient over the age of 65 years who had been receiving treatment with at least one drug for more

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