

MEDICAL PRACTICE

Contemporary Themes

Need for supervision in the elderly receiving long-term prescribed medication

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Summary

Medication for 127 randomly selected patients aged over 70 in a large group practice was examined in relation to the available supervision for this treatment. About half the patients were on long-term treatment, mainly drugs associated with heart disease, depression, or anxiety. Nineteen had had no recorded contact with the family doctor for six months or longer, and examination by nurse surveillance suggested that three might be suffering from drug toxicity. It was concluded that reliance on self-referral by elderly patients was unsafe.

Introduction

The quality of care for the elderly sick at home depends largely on the interest and skills of general practitioners and on the domiciliary nursing and social services supporting them. The general practitioner services are of crucial importance in the present organisation because the family doctor is expected not only to deal with illness or social problems brought direct to his notice by patients, relatives, neighbours, or community services but also to seek out, anticipate, or discover illness that has not been reported directly to him.

Infirm elderly patients are peculiarly at risk since social isolation, infirmity, or even the pattern of practice organisation

may prevent adequate contact between patient and doctor. We report part of a surveillance study of elderly people registered with a large well-organised group practice. It examined one limited but important aspect of patient care—namely, the supervision of patients on long-term drug treatment. This study attempted to audit one aspect of the supervision available for the elderly sick at home.

Patients and methods

The original investigation was conducted in a group general practice staffed by five doctors. Four district nurses and two health visitors were "attached" by arrangement with the area health authority; an additional research nurse was seconded to the practice to undertake some of the visits and to be responsible for the day-to-day running of the project. An experimental computer-based information system, designed for research, service scheduling, and practice-activity analysis had been in operation for three years. This system formed the basis for selecting and identifying a random sample of elderly people.

About 8% (1040) of the 13 000 people registered with the practice were over 70 although not all were living at home. A one-in-eight sample of people who were living at home was selected and any other elderly persons registered with the same practice and living in the selected households was added to the study group. The study group therefore included 127 people—12% of the elderly population. Each nurse was allocated some patients in a limited geographical area whom she visited four times over 12 months. At each visit a structured social history was obtained and recorded on a questionnaire form, the recent use of medical services documented, physical performance assessed and blood taken for a biochemical profile. A record was made of the types and quantities of drugs that each patient was taking regularly on prescription. When a patient was found to have either a medical or social problem they were referred to an appropriate agency for assessment—general practitioner, health visitor, social or welfare services, or home nursing service. Details of the initial visits have been presented by Shaw.¹

At the fourth visit mental function was assessed by the nurse using the set test technique reported by Isaacs and Akhtar.² This

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is a simple verbal test, easy and quick to administer and yielding a numerical index. Scores of less than 15 correlate well with a clinical diagnosis of dementia while scores in the range of 15-24 have a less certain association. No patient with a score of 25 or more showed clinical evidence of dementia.³

Results and comment

Among the sample 64 patients (22 men (57%) and 42 women (47%)) were taking regular medication. Among this group were ten of the 27 patients in the total sample who were over 80. The most common groups of drugs prescribed were psychotropic agents and those related to cardiovascular disease. Of the total sample 18% of the men and 20% of the women were receiving antidepressants, anxiolytics, or sedatives, while 26% of the men and 28% of the women were receiving one, or a combination, of those drugs associated with treating heart disease—namely, hypotensive agents, diuretics, potassium supplements, and cardiac glycosides. Of these patients 25% were receiving treatment for more than one condition (table I).

TABLE I—Numbers of drugs prescribed for individual patients

No of drugs	0	1	2	3	4	5	6	7	8	Total No of patients
Men	16	8	7	4	2	1	0	0	0	38
Women .. .	47	9	14	9	4	4	0	1	1	89

Iatrogenic disease related to drugs is common in the elderly.^{4, 5} Because the risks of the many complications of drug treatment are related to the isolation of elderly patients from medical advice by social conditions, changing patterns of general practice organisation, or physical infirmity it became relevant to assess both patient infirmity and the level of contact between patient and medical staff. Thus 29 (3 men and 26 women) of the 64 patients receiving medicines and 26 of the 63 patients who did not, were living alone, and seven of those living alone and receiving long-term drug treatment were also too incapacitated to leave their home without the help of another person.

One aspect of infirmity which may be relevant to safe drug treatment is associated with reduced mental acuity. The risk of misguided incorrect drug doses is substantially increased in patients who have poor memories and are not alert. This is particularly true for patients who live alone or have a complicated regimen of medication. The risk must again be increased where there is a possibility of confusional states induced by drug intoxication. We attempted to assess the proportion of people at risk by relating both the complexity of their drug regimen and their social environment to an objective estimate of mental function. Since a set test² result below 15 associates closely with other evidence of clinical dementia, the data in table II suggest that half the people with this disability were receiving drug treatment, most of them being prescribed two or more drugs.

TABLE II—Number of drugs taken by patients in relation to their set test score*

Set test score	Number of drugs taken								
	0	1	2	3	4	5	6	7	8
≥25	20	7	8	8	2	2	0	0	1
15-24 .. .	20	6	6	2	1	1	0	0	0
0-14	7	1	3	2	1	0	0	0	0

*Test score only available for 98 patients in the sample

Table III shows the social environment in relation to the test score on the assumption that this also contributes to vulnerability. Thus of 14 persons with scores of 14 or less 12 lived either alone or with another elderly person and six of these were receiving long-term drug treatment. This treatment may contribute to the reduced intellectual function although we have no evidence to support or deny this possibility.

CONTACT WITH MEDICAL ADVISERS

The number of times each patient consulted their doctor in the 12 months before the nurse's visit was recorded. Of those receiving

TABLE III—Number of patients in relation to their set test score* and social environment. Figures in parentheses are numbers of patients receiving drugs.

"Set test" score	No living alone	No living with other elderly person(s)	No living with younger relations or friends
≥25	22 (11)	17 (11)	8 (6)
15-24	15 (7)	14 (4)	8 (5)
0-14	8 (4)	4 (2)	2 (1)

*Set test score only available for 98 patients in the sample.

drug treatment 56 (87%) consulted their doctor compared with 45 (71%) of the patients who were not treated with medicines. The 64 patients who received medication generated 186 consultations, producing a consulting rate of 2.9 per person a year compared with a rate of 1.9 consultations per person among those not receiving medication. A more important index of supervision can be provided in another way. Table IV shows the various groups of prescribed drugs and the length of time before the nurse's visit since each patient had last consulted his doctor. Two patients receiving drugs connected with diseases of the heart had been receiving repeat prescriptions for digoxin together with other associated drugs for three and six years without recorded review by the general practitioner. Another patient had not been seen by the general practitioner for three years, although he had been reviewed annually at a hospital outpatient clinic. A further two patients receiving digoxin had last been reviewed ten and 13 months before the project and were thought by the nurses carrying out the surveillance to be showing signs of digitalis toxicity.

TABLE IV—Drugs prescribed and doctor contacts after prescription

No of months since last recorded doctor contact:	<1	1-2	-3	-4	-5	-6	>6
Cardiovascular:							
CCF (assoc)	6	5	1	1		1	9
Antihypertensive .. .				1		1	0
Respiratory (bronchodilators) ..	1			2			2
Central nervous system:							
Antidepressants	3	1	1	1			1
Anxiolytics	1	2					
Sedatives	1		2		1		2
Analgesics:							
Mild	2			1			2
Butozolodine		1		1			1
Steroids:							
Prednisone			1				
Others	5	1				1	2

In the other groups the biochemical profile of a woman last reviewed three years before the nurse's visit showed changes consistent with phenylbutazone poisoning. Two further patients had been receiving prescriptions for nitrazepam and cyclobarbitone one for three and the other for four years without recorded review by their doctor. Since the hospital services may supervise drug treatment for some patients inquiry was made into the frequency of this occurrence.

CONTACT WITH OTHER STAFF

All 127 patients in the sample were asked by the nurse whether or not they had attended a hospital outpatient clinic, and the patients' medical records confirmed that of the 21 patients who had attended outpatient clinics 16 were receiving regular drug treatment.

Contact with nurses or health visitors may also provide a basis for supervision. In our sample five of the nine patients who had been in contact with a district nurse were receiving medicines and details of these contacts confirmed that the nurse was providing care during acute phases of illness rather than regular long-term care and surveillance. Similarly three of the six known and supervised by the health visitors were receiving medication.

Discussion

The study shows that, although those patients receiving long-term drug treatment consulted their doctor more frequently than those not receiving such treatment, there was a similar proportion of patients in both groups who did not consult their doctor at all during the 12 months before the study. Some concern is aroused by this deficiency in supervising patients

receiving long-term medication. Wootton⁶ noted that there appeared to be little effort by medical disciplines to ensure that medicines and medications were applied correctly and consequently patients adopted haphazard routines about the time spacing of their drugs. It is well known that digitalis toxicity is increased in patients who also receive oral diuretics.⁴ More generally, multiple drug treatment in the aged carries a particularly enhanced likelihood of drug intoxication and this risk is increased in patients with impaired intellectual function. We have used the set test² as a readily available index of reduced mental acuity and suggest that it provides a means of identifying a group of elderly patients in whom the risks of drug side effects may be increased. Since the test can be carried out by nurses or health visitors it could provide a useful screening tool.

Hall⁵ advocated quarterly review by the general practitioner of all elderly patients receiving repeat prescriptions because their ability to handle drugs by absorption, detoxication, and excretion is reduced as the efficiency of their body and individual

organs lessens with age. The doctors in the study practice have been aware of these problems and are creating a filing system to ensure regular reappraisal of those patients on long-term drug treatment.

The observations and data recorded, however, suggest that reliance on self-referral by elderly infirm patients, whether on long-term treatment or not, will not guarantee adequate supervision of their medical needs.

References

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Around Europe

Improving the hospital service?

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By comparing experiences gained from three years in a Dutch peripheral hospital and a similar period in a British hospital several ideas emerged for improving the hospital sector of the NHS. All figures refer to 1972. The Dutch hospital, which is a semi-permanent building with 240 beds, was opened in 1965 to meet the needs of an expanding town of 32 000 people and its surrounding area. There is a high level of accommodation for the general specialties including neurology, psychiatry, and obstetrics, with a large outpatient wing adjacent to the radiology and pathology departments. The building is now being replaced by a multistorey block. The UK hospital comprises two units about a mile apart with 350 beds, of which 160 are for geriatric and chronic sick patients. One hospital, built in 1900, contains geriatric and outpatient accommodation. On the second site a new surgical block was opened in 1972 with adjacent theatres but the remaining ward accommodation is in workhouse buildings dating from 1830.

Work load

A comparison of work load is important. The Dutch hospital's figures were greater in 1972 for total admissions, operations, and outpatient attendance. The average patient age, however, was lower and there were no geriatric or chronic sick beds. Given similarity in the overall figures one is justified in drawing conclusions when other data, such as staff employment, are wildly disparate.

Management and administration

The Dutch hospital is largely autonomous and controlled by a

voluntary management committee, which is typical of nonteaching hospitals in Holland (fig 1). Administration is in the hands of a medical, a nursing, and an economic director. The last is responsible for most day-to-day decisions and runs the hospital as a business concern, balancing income, which comes from treating patients, against expenditure, including the replacement of borrowed capital. A much more complicated organisation controls the British system (fig 2). Since 1974 local medical care has in theory been given to the district management team, but it has no real control over capital development or expenditure.

The replacement of the present Dutch hospital exemplifies the difference in approach. The management committee had plans prepared and presented them to the Ministry of Health for necessary approval. This was given only after a prolonged struggle (since there has been overprovision of hospitals in Holland), in which the management committee was supported by the local mayor and council. They have been able to build on a new site and the committee hopes to recoup in part by selling off the old one which is close to the town centre.

The Dutch hospital managed its own affairs with 19 people whereas the non-independent British hospital employed 49. This latter number has increased since NHS reorganisation, and of course does not include the large numbers employed at area and regional levels. A compact modern building, more mechanisation, and a more flexible approach to job demarcation operates to the advantage of the Dutch hospital. As a result, only 55 ancillary staff were employed, whereas the British hospital employed 190. Undoubtedly the necessity for the economic director to balance his books, and his having the necessary powers to do so, make for greater efficiency especially as the wages paid to Dutch staff are higher than those of their British counterparts.

Medical and nursing staff

Most Dutch specialists are independent contractors bound to one hospital, paying for the use of its facilities and for their secretarial staff, with remuneration on an item-of-service basis. Despite these expenses their incomes are much higher than those of their UK counterparts. On the other hand, they are more often called outside normal working hours, since, at least in the hospital under consideration, nearly all patients are seen on admission by a specialist. Much of