

DRUGS AND THE ELDERLY - PRESCRIBING IN A CHRONIC CARE INSTITUTION

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INTRODUCTION

Polypharmacy, and the repeated prescribing of unnecessary or no longer required drugs, are well described problems in the clinical management of elderly people, both in community and institutional settings¹.

This study was performed in order to obtain details about the prescribing habits at St Vincent de Paule Residence (S.V.P.R.), and by analysing the results and comparing these to articles published abroad, see whether such habits were satisfactory, and if not, whether the problems found were unique and could be improved or resolved.

It is important to stress at this stage that S.V.P.R. is a "complex" chronic institution, providing hospital, nursing, residential and sheltered accommodation facilities. As a result, patients range from high-dependency to no-dependency functional levels and from complex, multiple medical problems to little if any. This makes S.V.P.R. rather unique but also makes it difficult to compare results to other institutions abroad and this fact has to be kept in mind.

METHOD

Data, about the prescription charts of 919 elderly patients and 110 patients under the age of 60 years, was collected over a one week period in February 1991 and analysed.

"Elderly" for the purpose of this study was defined chronologically i.e. sixty years and over. The mean age of the elderly patients was 79 years, with a range of 60 to 99 years.

Statistical methods consisted of calculating standard errors of difference between means and using probability tables relating multiples of much standard errors to a normal distribution².

RESULTS

The mean number of drugs prescribed per elderly patient was 3.75, with a range of 0 to 12 drugs per patient.

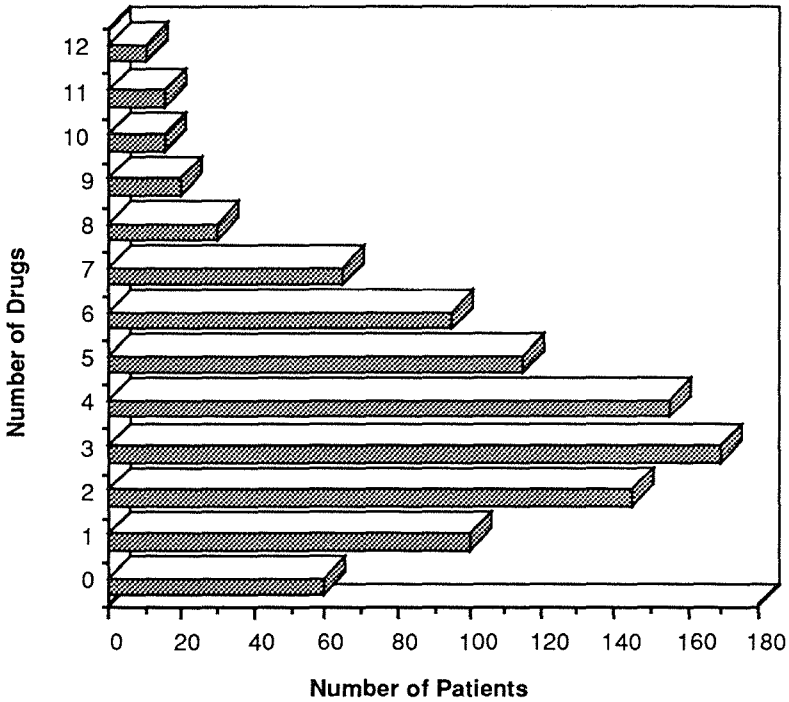
When a comparison was made of the mean number of drugs per patient with age, Table 1, the age-group 80 to 89 years and 70 to 79 years show the highest means at 3.85 and 3.84 respectively. Interestingly, the age-group 90 years plus, has the lowest mean, even lower than the under 60 years age-group.

Table 1
Mean number of drugs per patient compared to age

Age	S.V.P.R.	Mean No of Drugs per Patient
< 60		3.54 (110 patients)
60 - 69		3.61 (138 patients)
70 - 79		3.84 (274 patients)
80 - 89		3.85 (419 patients)
90 - 99		3.49 (88 patients)

The frequency distribution of the number of drugs prescribed is shown in Figure 1. 167 patients (18%) were taking 3 drugs, 152 patients (16%) were taking 4 drugs and 139 patients (15%) were taking 2 drugs. 57 patients (7%) were on no medication whilst 18 patients (2%) were taking 10 to 12 drugs.

Fig. 1. Frequency distribution of the number of drugs prescribed



When a comparison is made of the number of drugs prescribed with age, Table 2, the age-group 90 years plus shows the highest percentage of patients on no medication (10%), but otherwise, the percentages are similar.

Table 2
Number of drugs prescribed compared to age

Age	S.V.P.R. Number of Drugs (% Patients)			
	0	1 - 4	1 - 6	7 - 12
60 - 69	6	61	82	12
70 - 79	6	60	83	11
80 - 89	6	59	81	13
90 - 99	10	60	79	11

The prescribing rates of the different classes of drugs are shown in Table 3. The most commonly prescribed medications were Vitamins (42% of patients), Hypnotics (30% of patients), Diuretics (30% of patients) and other Cardiovascular Drugs apart from digoxin (29% of patients). Digoxin was prescribed to 10% of patients.

Table 3
Percentage of patients on different types of drugs

Drug	Percentage of Patients
Vitamins	42
Hypnotics	30
Diuretics	30
Cardiovascular	29
Analgesics	23
Potassium	19
Hypoglycaemics	18
Laxatives	18
Major Tranquillisers	17
Aspirin	13
Sedatives	11
Respiratory	11
Digoxin	10
Antidepressants	9
Antiparkinsonian	8
H ₂ Blockers	3
Thyroid	2
Antacids	2
Steroids	2

DISCUSSION

It is interesting at this stage to compare results to statistics on prescribing habits in institutions abroad^{3,4}, bearing in mind the "complex" nature of S.V.P.R. already mentioned. Table 4 shows the mean number of drugs per patient in nursing homes in the U.K. and the Republic of Ireland, and chronic geriatric wards in the U.K. To me it is obvious S.V.P.R. can do better.

Table 4
Mean number of drugs per patient in institutions in various countries

Country	Mean Number of Drugs per Patient
U.K. (Nursing Home)	3.02
U.K. (Chronic Ward)	3.17
Ireland	4.30
Malta (S.V.P.R.)	3.75

Table 5 shows a comparison of the prescribing rates of some of the different classes of drugs in nursing homes in various countries, including U.K., U.S.A., Republic of Ireland and Malta i.e. S.V.P.R.

Table 5
Comparison of prescribing rates of some different classes of drugs in nursing homes in various countries and S.V.P.R

Drug	Nursing Homes (Percentage Patients)			
	U.K.	U.S.A.	Ireland	Malta
Hypnotics	45	33	42	30
Diuretics	34	34	36	30
Major Tranquillisers	21	45	27	17
Digoxin	9	-	20	10
Laxatives	32	53	11	18
Hypoglycaemics	2	11	2	18
Vitamins	13	-	11	42

Some classes of drugs show a similar prescribing rate, for example Diuretics, whilst others show wide variations, for example 45% of patients are on Major Tranquillisers in the U.S.A. compared to 17% in Malta.

Malta beats everybody convincingly regarding Vitamins whilst a much higher prescribing rate of Hypoglycaemics (18% of patients) compared to the U.K. and the Republic of Ireland (both 2% of patients) reflects the higher prevalence of Diabetes Mellitus in this country.

Table 6 compares the prescribing rates of some of the different classes of drugs in chronic geriatric hospital wards and S.V.P.R. Again Vitamins and Hypoglycaemics show a higher prescription rate in Malta, together with Diuretics, Potassium and Digoxin whilst Laxatives are much more prescribed in the U.K.

Table 6
Comparison of prescribing rates of some different classes of drugs in chronic geriatric hospital wards (U.K.) and S.V.P.R.

Drug	Hospital Chronic Care Wards (Percentage Patients)	
	U.K.	Malta
Hypnotics	34	30
Diuretics	20	30
Major Tranquillisers	18	17
Digoxin	6	10
Laxatives	73	18
Vitamins	12	42
Hypoglycaemics	4	18
Potassium	3	19

On the whole, S.V.P.R.'s prescribing habits are not worrying when compared to other countries. However the prescribing rates in the countries mentioned were also thought to be excessive and could be improved, so satisfactory comparisons might lead to a false sense of security. Certainly drug prescribing at S.V.P.R. can be better as further analysis of the population at S.V.P.R. will show.

For example, Table 7 shows a comparison between male patients who were resident in either independent or dependent wards. In theory, independent patients should have less medical problems and less prescriptions. However, the results show that the independent male elderly patients had a higher mean number of drugs per patient, 4.69 compared to 3.82, ($0.01 > P > 0.001$), and had a higher percentage of patients on 6 to 11 drugs (36% compared to 22%).

Table 7
Comparison of independent and dependent male patients at
S.V.P.R.

	Independent	Dependent
Number of patients	106.00	118.00
Mean drugs per patient	4.69	3.82
% of patients on no drugs	5.00	4.00
% of patients on 1 - 5 drugs	59.00	74.00
% of patients on 6 - 11 drugs	36.00	22.00

Table 8 shows a comparison between female patients, with similar dependency and medical pathology, but with one group in wards honoured with weekly ward-rounds by a consultant geriatrician whilst the other group in wards honoured by the weekly round of a senior doctor with excellent expertise but not special training in geriatric medicine. Again results differ with patients in the direct hands of a geriatrician showing a significant lower mean number of drugs per patient, 2.94 compared to 4.27, ($P < 0.001$), a higher percentage of patients on no drugs (10% compared to 6%) and a lower percentage of patients on 6 to 12 drugs (14% compared to 30%).

Table 8
Comparison between female wards

	S.V.P.R.	
	Yes	Geriatrician No
Number of patients (females)	174.00	180.00
Mean number of drugs per patient	2.94	4.27
Percentage of patients on no drugs	10.00	6.00
Percentage of patients on 1 - 5 drugs	76.00	64.00
Percentage of patients on 6 - 12 drugs	14.00	30.00

However, when the classes of drugs were compared, Table 9, much to the dismay of the geriatrician, 40% of his patients were on Hypnotics

compared to 20% of patients in the other wards, whilst his patients were prescribed less Diuretics and Digoxin (17% of patients compared to 41% and 6% of patients compared to 13%, respectively) and less Sedation (7% vs 15%). The ever present and overprescribed Vitamins were equal.

Table 9
Comparison between female wards

Drug	S.V.P.R.	
	Yes %	Geriatrician No %
Vitamins	48	46
Hypnotics	40	20
Sedation	7	15
Major tranquillisers	11	16
Diuretics	17	41
Potassium	12	33
Digoxin	6	13
Cardiovascular	22	22
Analgesics	19	38
Laxatives	21	11

CONCLUSIONS

Such findings, from these last two analysis of samples of the population at S.V.P.R., together with all the information obtained, and the comparisons made to prescribing habits in other countries, suggest that the dispensing of medication to patients at S.V.P.R. can be improved, especially by decreasing overprescribing.

This study has been most informative about the overall prescriptions of patients at S.V.P.R. Such audit will help to improve efficiency, reduce costings, reduce precious nursing time spent on drug-rounds and improve patient care.

It is recommended that such surveys should be carried out on a regular basis in chronic care institutions, whilst on a more fundamental level, it is important to emphasise that the function of a ward-round should entail a review of patients' prescription charts to discontinue unnecessary or no longer required medication.

I would like to end by referring to a study published in *Age and Ageing* in 1988⁵. In a geriatric unit in the U.K., over a six month period, the mean number of drugs per patient in chronic care wards was reduced from 3.63 to 1.69, a reduction of over 5% together with a saving of 34% in drug costs. The drugs discontinued were sedatives and tranquillisers, analgesics, laxatives, digoxin and diuretics.

Even more impressive was the fact that these drugs were discontinued without any detriment to their patients' well-being! Such statements should encourage us to start chopping up our prescription charts.

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