

Prescribing in New Zealand general practice: Part 2

– prescribing for people aged 45–64

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ABSTRACT

Aim

To describe patterns of prescribing in New Zealand general practice for patients aged 45–64 years.

Methods

The computerised records of 225 348 consulting patients from 48 general practices from around New Zealand were examined. A subset of 47 505 consulting patients (53.9% were female) aged 45–64 years was selected. General practice prescribing was described in terms of Anatomical Therapeutic Chemical (ATC) grouping, demographic characteristics and health card eligibility.

Results

Seventy-eight per cent of all consulting patients received one or more prescriptions during the study

period. Patients were prescribed a mean of 10.7 medication items per annum. Females were prescribed to more frequently than males. Community Services Card (CSC) holders were prescribed to more frequently than patients without a CSC. The most frequently prescribed ATC groups were the cardiovascular system, nervous system, alimentary tract and metabolism, systemic hormone preparations and the respiratory system and allergies.

Conclusions

Prescribing is a frequent outcome of a general practice contact for patients aged 45–64. It is assumed that the data presented is a reflection the morbidity found in this demographic group and the prescribing decisions of New Zealand general practitioners.

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Background

The Dunedin Royal New Zealand College of General Practitioners Research Unit (Dunedin RNZCGP Research Unit) database is a useful source of population-based health information and provides individualised (but non-identifiable) prescription data which can be linked to age, sex and health card status. Part 1 of this retrospective descriptive study described prescribing patterns for a population of patients aged 20–44 consulting in general practice in New Zealand over a 12-month period,¹ while this paper looks at prescribing for patients aged 45–64 years of age.

Methods

The methods are described in Part 1 'Prescribing in New Zealand general

practice – prescribing for people aged 20–44'.¹ Patients aged 45–64 as at 1 January 2000 were selected for Part 2 of this study.

Results

The study population was drawn from the same population described in Part 1 'Prescribing in New Zealand general practice – prescribing for people aged 20–44'.¹ Of the 225 348 consulting patients, 47 505 patients were aged 45–64 (53.9% were female). These patients consulted 274 710 times (5.8 consultations per patient per annum), and were prescribed to 301 445 times (6.3 occasions per patient per annum). They were prescribed 207 431 repeat medications (4.4 per patient per annum) giving a total of 508 876 individual medica-

tion items (10.7 items per patient per annum). Females consulted more frequently than males (6.3 consults per patient per annum versus 5.4).

Of all consulting patients aged 45–64, 77.5% were prescribed to at least once during the year, with 43.6% prescribed five or more medication items per annum, 32.1% prescribed ten or more and 16.2% prescribed twenty or more medication items during the study year.

Overall, 26.7% of all patients aged 45–64 were recorded as holding a Community Services Card (CSC) with card holding rising with age; 20.7% of patients aged 45–49 had a CSC compared to 45.1% of patients aged 60–64. Patients with a CSC were prescribed to more frequently than patients without a CSC (9.6 versus 5.1

scripts per annum), and were prescribed more medication items (12.0 versus 9.3 medication items per annum). Table 1 indicates that females were prescribed to more frequently than males (7.1 versus 5.4 scripts per annum), and 12.0 versus 9.3 medication items per annum.

Table 2 shows the most frequently prescribed medication items from the ATC groupings by therapeutic subgroup; 21.2% of all medication items were for the cardiovascular system, 15.4% from the nervous system, 13.3% for the alimentary tract and metabolism, 10.3% for systemic hormone preparations excluding contraceptive hormones, and 9.4% for the respiratory system and allergies ATC grouping.

Discussion

This descriptive study examined the prescribing records of 48 New Zealand general practices for consulting patients aged 45–64. This study provides valuable prescribing data for a demographic group for which there is little published New Zealand evidence.

Females are prescribed to more frequently than males. Some (but not all) of this difference is related to hormone replacement medications for this age group. If this therapeutic group is excluded then females are prescribed to 6.1 times per annum. However, it is still not clear whether the differences in prescribing are related to women's reproductive role, physician bias, or differences in illness behaviour.²

As was demonstrated in Part 1, patients holding a community services card (CSC) are prescribed to at much higher rates than those without and this difference gets greater with increasing age. The proportion of patients with a CSC also increases

Table 1. Mean number of prescriptions and medication items per consulting patient per annum by age, sex and community services card status

Age	Females	Males	CSC	No CSC	All patients
Mean number of prescriptions					
45–49	5.2	3.8	6.7	4.0	4.5
50–54	6.6	4.8	8.6	5.0	5.7
55–59	8.3	6.3	10.6	6.1	7.4
60–64	9.8	7.8	11.7	6.5	8.9
TOTAL	7.1	5.4	9.6	5.1	6.3
Mean number of medication items					
45–49	8.3	6.1	10.9	6.3	7.3
50–54	10.9	8.0	15.3	8.1	9.5
55–59	14.3	10.9	18.8	10.4	12.7
60–64	17.0	13.9	20.9	11.0	15.5
TOTAL	12.0	9.3	16.9	8.5	10.7

with age as patients take early retirement, or are unable to work.

The most frequently prescribed medication items were for the cardiovascular system (21.2% of all medication items). Angiotensin converting enzyme (ACE) inhibitors were the most frequently prescribed medications from this group, followed by beta-adrenoceptor blockers, thiazides and related diuretics, and calcium channel blockers. However, it must be noted that when all diuretics are combined (thiazide, potassium sparing and loop diuretics) they make up 20.7% of all medications for the cardiovascular system. In the year 2000 when this study data

was recorded, the cardiovascular system was the leading pharmaceutical investment group in New Zealand with 23% of all pharmaceutical expenditure. Since this time, medications for the cardiovascular system have dropped to 11% of pharmaceutical expenditure, although the volume of cardiovascular medication continues to increase.^{3,4}

The next most frequently prescribed therapeutic group was for the nervous system with 15.4% of all medication items from this ATC group. The most frequently prescribed medications were antidepressants, primarily tricyclic antidepressants (TCAs) and related agents, and selective serotonin reuptake inhibitors (SSRIs). This reflects recent New Zealand data which suggests there is a high proportion of depressive disorders in this demographic group.⁵ It is interesting to note that as patients get older the proportion taking TCAs increased relative to those prescribed SSRIs. There is much debate about the relative efficacy and side-effect profile of SSRIs and TCAs, with SSRIs purported to have the better side effect profile, while TCAs are claimed to have better antidepressant effect in severely depressed patients,⁶ however the reasons for greater use of TCAs with age cannot be explained from the data presented here.

Medication for the alimentary tract and metabolism makes up 13.3% of all medication items. The most frequent medications in this group are anti-ulcerants, medications for diabetes, laxatives and vi-

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Table 2. The most frequently prescribed medication items; proportion of therapeutic group by subgroup

Age group	45-49	50-54	55-59	60-64	Overall
Therapeutic group (n)					
Subgroups (% of therapeutic group)					
Cardiovascular system (n)	14 940	24 920	32 070	36 172	108 102
Angiotensin converting enzyme (ACE) inhibitors	29.4	27.6	27.8	24.5	26.9
Beta adrenoceptor blockers	23.3	22.6	22.7	22.2	22.6
Thiazide and related diuretics	14.4	14.5	13.4	11.9	13.3
Dihydropyridine calcium channel blockers (DHP CCBs)	10.2	9.6	9.7	10.1	9.9
Other calcium channel blockers	3.5	5.3	5.0	5.9	5.2
All others	19.1	20.5	21.3	25.4	22.2
Nervous system (n)	18 828	20 866	19 914	18 814	78 422
Cyclic and related agents	15.6	17.0	16.8	15.6	16.3
Opioid analgesics	12.3	12.2	15.0	14.4	13.5
Selective serotonin reuptake inhibitors	17.8	13.8	11.6	8.2	12.9
Antipyretics and non-opioid analgesics	7.9	9.7	12.5	15.2	11.3
Sedatives and hypnotics	9.5	10.4	10.3	11.4	10.4
All others	36.8	37.0	33.8	35.1	35.7
Alimentary tract and metabolism (n)	12 913	16 566	18 527	19 711	67 717
Proton pump inhibitors	22.9	24.1	21.8	22.2	22.7
Oral hypoglycaemic agents	11.4	12.6	15.4	16.5	14.3
H2 antagonists	10.9	10.4	11.9	10.9	11.1
Calcium	4.0	6.6	8.0	8.9	7.2
Glucose/blood testing	6.2	6.0	7.6	7.5	6.9
All others	44.6	40.3	35.3	34.0	37.9
Systemic hormone preparations excluding contraceptive hormones (n)	9965	16 084	15 135	11 051	52 235
Oestrogens	34.4	35.3	33.8	24.2	32.4
Progestogen and oestrogen combined preparations	23.8	33.5	32.4	21.0	28.7
Thyroid and antithyroid agents	21.4	15.6	18.2	29.4	20.4
Corticosteroids and related agents for systemic use	10.4	7.6	9.1	15.9	10.3
Progestogens	5.2	4.7	3.6	4.4	4.4
All others	4.8	3.3	2.9	5.1	3.8
Respiratory system and allergies (n)	11 676	12 304	12 237	11 706	47 923
Allergy prophylactics	21.9	19.1	18.8	19.2	19.7
Inhaled beta-adrenoceptor agonists MDI low dose	21.4	21.3	17.6	17.0	19.3
Inhaled corticosteroids MDI high dose	14.6	16.7	16.4	17.7	16.3
Inhaled corticosteroids MDI very high dose	7.2	8.4	11.0	9.6	9.0
Antihistamines	9.7	7.9	8.8	8.1	8.6
All others	25.3	26.5	27.5	28.5	26.9
All other medications (n)	33 436	38 701	39 892	42 448	154 477
All medications	101 758	129 441	137 775	139 902	508 876

tamins. This therapeutic group now makes up the most costly investment group in New Zealand with 19% of all pharmaceutical expenditure in 2002. Much of this cost component was driven by anti-ulcerants with a continuing clinical preference for proton pump inhibitors over H_2 antagonists.⁴

Systemic hormones (excluding contraceptives) make up 10.3% of all medication items. The most frequently prescribed medications in this group are oestrogens, progestogen and oestrogen combined preparations and thyroid/antithyroid agents. These prescribing data predate the publication in 2001 of the 'Best practice evidence-based guideline for the appropriate prescribing of hormone replacement therapy (HRT)' which advocates that HRT is not recommended for routine use in the menopause⁷ and the release in July 2002 of the data of the prematurely stopped Estrogen plus Progestin study of the Women's Health Initiative (WHI). The reasons

for discontinuing the study were a perceived lack of cardiovascular benefit and a perceived increase in breast cancer, strokes and coronary events.⁸

Respiratory drugs are also frequently prescribed to patients aged 45–64. The most frequently prescribed medication items from this therapeutic group include nasal preparations, low dose beta-adrenoceptor agonists, and high dose inhaled corticosteroids. This in part reflects a greater prevalence of chronic obstructive airways disease (COAD) in patients aged 50 years and over where bronchodilators and corticosteroids are indicated. However, there is evidence that only about 15–20% of COAD patients will show a physiological response to either oral or inhaled steroids.⁹ Of concern is the frequency of prescribing of high and very high dose inhaled corticosteroids. As high dose inhaled corticosteroids are likely to have systemic effects in this group of patients, it is not recommended that they be

used and are seen as a costly treatment option.¹⁰

The results demonstrate that prescribing is a frequent outcome of general practice contact for patients aged 45–64, with females and community services card holders prescribed to most frequently. The most frequently prescribed therapeutic groups were for the cardiovascular system, nervous system, alimentary tract and metabolism, systemic hormone preparations, and the respiratory system and allergies. Data reflect the morbidity of this population and the prescribing decisions of general practitioners in New Zealand.

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