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Prescriptions for antiulcer drugs in Australia: volume, trends, and costs

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H_2 receptor antagonists and proton pump inhibitors have markedly changed the management of peptic ulcer and gastro-oesophageal reflux disease; they have also changed the profile of national drug budgets. Antiulcer drugs have retained the leading position in drug sales worldwide: sales of antiulcer drugs were valued at $US12.9 billion (£8.6bn) in 1998 and were increasing at 3% a year.[1]

Since 1992 the Australian government's pharmaceutical benefits scheme has required prescribers of proton pump inhibitors to certify the presence of peptic ulcer disease or ulcerating oesophagitis (confirmed by endoscopy, radiography, or surgery) and refractory to treatment with other drugs, scleroderma oesophagus, or Zollinger-Ellison syndrome. The aim of this study was to assess how these restrictions have affected prescribing of antiulcer drugs.

Participants, methods, and results

We analysed data from the pharmaceutical benefits scheme on the number of prescriptions for H_2 receptor antagonists, proton pump inhibitors, and cytoprotectant agents for the financial years 1992-3 to 1996-7 and 1999. Data on misoprostol and treatments to eradicate *Helicobacter pylori* were available only for 1999.

In 1999 antiulcer drugs made up 6.1% of all prescriptions dispensed. They were the second most costly group of drugs to the government, consuming 11.1% of the total pharmaceutical benefits scheme budget (table). Ranitidine, famotidine, nizatidine, omeprazole, and lansoprazole were all among the 100 drugs most often prescribed, and, with pantoprazole, were among the 100 most costly drugs to the government. Ranitidine was the third most commonly prescribed, and omeprazole was the second most costly. The total number of prescriptions for proton pump inhibitors was only half (51%) that for the H_2 receptor antagonists, but proton pump inhibitors were 2.4 times more costly. *H pylori* eradication treatments made up only 1.3% of all prescriptions for antiulcer drugs.

Between 1992-3 and 1999 total prescriptions for H_2 receptor antagonists, proton pump inhibitors, and cytoprotectant agents increased by 109%—increases of 51% for H_2 receptor antagonists and 1228% for proton pump inhibitors and a decrease of 84% for cytoprotectants. Prescriptions for proton pump inhibitors increased by 40% between 1995-6 and 1996-7 and by 43% between 1996-7 and 1999. Prescriptions for H_2 receptor antagonists increased by 3% between 1995-6 and 1996-7 and decreased by 4% between 1996-7 and 1999. Proton pump inhibitors have continued to make up an increasing proportion of total antiulcer drugs prescribed (13% in 1994-5, 20% in 1995-6, 25% in 1996-7, and 34% in 1999).

Comment

The proportion of proton pump inhibitors prescribed relative to H_2 receptor antagonists is at odds with the guidelines for the Australian pharmaceutical benefits scheme and with data on the epidemiology of refractory oesophagitis. Despite restrictions, proton pump inhibitors accounted for 34% of prescriptions for antiulcer drugs and for 51% of government expenditure on antiulcer drugs in 1999. Around 7-8% of consultations with general practitioners are for gastrointestinal problems, and this proportion did not change between 1992 and 1999.[2] Australians seem to consult at higher rates for gastrointestinal symptoms than do other nationalities.[3] The continued rise in the

Prescriptions for antiulcer drugs in Australia, 1999. Number, cost, and ranking for frequency and cost to the government pharmaceutical benefits scheme

	No of prescriptions dispensed	Rank among top 100 drugs dispensed	Cost to government ($A)	Rank among 100 drugs most costly to government	Average price ($A)	Total cost (market value)	% of total cost paid by government
H_2 receptor antagonists:							
Cimetidine	208 162	Not ranked	4 942 504	Not ranked	29.60	5 893 232	84
Ranitidine	3 602 179	3	63 679 869	5	23.78	85 642 291	74
Famotidine	1 082 206	36	18 879 948	41	24.28	26 271 972	72
Nizatidine	421 797	91	7 492 537	89	24.27	10 236 216	73
Proton pump inhibitors:							
Omeprazole	2 025 688	12	170 605 379	2	91.81	185 986 386	92
Lansoprazole	465 666	85	39 308 831	15	92.98	43 299 039	91
Pantoprazole	208 678	Not ranked	18 514 652	44	97.12	20 267 050	91
Prostaglandin analogue:							
Misoprostol	20 004	Not ranked	905 069	Not ranked	50.53	1 010 762	90
Cytoprotectant agents:							
Bismuth	3 495	Not ranked	75 157	Not ranked	28.64	100 086	75
Sucralfate	17 803	Not ranked	313 572	Not ranked	23.05	410 308	76
Helicobacter pylori eradication treatment:							
Bismuth-metronidazole-tetracycline	7 448	Not ranked	408 466	Not ranked	64.87	483 118	85
Omeprazole-clarithromycin-amoxicillin	92 945	Not ranked	8 769 326	78	104.66	9 727 314	90
Ranitidine-bismuth-clarithromycin-amoxicillin	2 378	Not ranked	217 014	Not ranked	101.30	240 820	90
Omeprazole-metronidazole-amoxicillin	5 527	Not ranked	441 656	Not ranked	90.60	500 768	88
Total for antiulcer treatment	8 143 973	7	333 648 911	2		390 069 362	86

number of prescriptions for proton pump inhibitors, combined with evidence of inappropriate use,[4] suggests that the restrictions have had a limited impact on prescribing behaviour.

In contrast, despite the well established benefits of eradication of *H pylori* in the management of peptic ulcer disease, only 1.3% of total prescriptions in 1999 were for treatments to eradicate *H pylori*.

The decline in the number of prescriptions for H_2 receptor antagonists is consistent with experience in the United States and Britain. The National Institute for Clinical Excellence has issued guidelines that are expected to reduce prescriptions for proton pump inhibitors by 15% in England and Wales.[5] The Australian experience provides some much needed comparative data for future evaluations of the impact of these guidelines.

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A medical mishap

A poor historian

A retired polysymptomatic man attended surgery with his wife describing "adrenaline rushes," 15 minute periods of flushing, palpitations, and overwhelming anxiety. These had been occurring for many years but with increasing frequency. His wife attributed this to his "nerves," something he strongly denied. A brief scan through the man's notes gave the impression of a frequent attender with a history of anxiety disorder, hypertension, hyperlipidaemia, and arrhythmia, with numerous outpatient visits and cardiac investigations to his name.

He requested an adrenal scan to look for the source of all his adrenaline. "Extremely unlikely to yield any valuable information," I informed him, opting instead for a cardiology referral for consideration of an event recorder and adjustment of his antiarrhythmia treatment.

Fortunately, the cardiologist was alert, and two tests for urinary catecholamine concentration have revealed phaeochromocytoma, with a pending MIGB (131I-metaiodobenzylguanidine) scan to guide further management.

What have I learnt from this? Firstly, history taking, the first clinical skill learnt at medical school, underpins all diagnoses. In among this patient's numerous complaints lay a textbook description of a period of crisis from a sympathetic tumour. The poor historian was not the patient but the doctor, for my inability to interpret the information presented in an unbiased way.

Secondly, although common things are common, rarities do occur and are equally likely to arise in a patient previously labelled with a psychiatric disorder.

And finally, although prior knowledge of a patient's history can guide the consultation, it may also prejudice its outcome.

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