

Hidden high-dose antipsychotic prescribing: effects of p.r.n. doses

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Aims and method The Royal College of Psychiatrists' Consensus Statement on 'The use of high-dose antipsychotic medication' suggests only fully qualified psychiatrists (MRCPsych) should recommend the prescribing of high-dose antipsychotic treatment. We observed changes in anti-psychotic prescribing in two surveys of psychiatric in-patients conducted eight and 32 months after publication of the Consensus Statement.

Results Overall mean chlorpromazine equivalent doses of antipsychotic drugs reduced between the surveys. When p.r.n. (as required) prescribing (usually done by junior doctors) is included, mean potential doses and numbers of patients who might receive 'high-doses' increases substantially, although the reduction between surveys in total mean dose and proportion of patients on high-dose antipsychotic medication is preserved, and the actual use of p.r.n. medication was low (4–5% of p.r.n. prescriptions).

Clinical implications We recommend the development of local guidelines for junior staff concerning antipsychotic drug prescribing, regular monitoring of p.r.n. medication by consultants, and pharmacists' involvement in reviews of patients prescribed high-dose antipsychotic medication.

both mean antipsychotic doses and the proportion of patients prescribed high-dose antipsychotic medication after the Consensus Statement (Cornwall *et al.*, 1996; Pinner & Edgar, 1996).

Further studies have highlighted the influence of as required (p.r.n.) prescriptions on the overall dose of antipsychotic medication. Although Newton *et al.* (1997) found only 2% of in-patients were prescribed high-dose antipsychotic medication, all as a direct result of p.r.n. prescribing, this contrasts with their calculation of 42.4% of patients prescribed high-dose antipsychotic medication in another study (Krasucki & McFarlane, 1996), also when p.r.n. prescriptions were included.

The aims of our surveys were to observe changes in high-dose antipsychotic medication prescribing post-Consensus Statement and to examine the influence of (p.r.n.) medication, usually prescribed by junior psychiatrists, on the proportion of patients receiving high-dose antipsychotic medication.

In 1994 the Royal College of Psychiatrists published its Consensus Statement on 'The use of high-dose antipsychotic medication' (Thompson, 1994). Guidelines were presented to facilitate the decision to prescribe antipsychotic drugs above *British National Formulary* (BNF) advisory limits and suggested that, in particular, only fully qualified psychiatrists (MRCPsych) should take such decisions.

While initial surveys of in-patient antipsychotic prescribing concentrated on identifying poly-pharmacy, recent surveys have examined actual doses prescribed, in particular estimating the proportion of in-patients on high-dose antipsychotics (usually defined as >1000 mg per day of chlorpromazine equivalents, or above BNF limits). Pre-Consensus Statement surveys identified large variations of between 1 and 44% of acute rehabilitation psychiatric patients on high-dose antipsychotic medication (Torkington *et al.*, 1994; Warner *et al.*, 1995). Subsequent surveys have demonstrated significant reductions in

Table 1. Chlorpromazine equivalents

	Equivalents
<i>Oral</i>	
Chlorpromazine	100 mg
Clozapine	50 mg
Droperidol	4 mg
Flupenthixol	2 mg
Haloperidol	3 mg
Loxapine	15 mg
Pimozide	2 mg
Risperidone	1 mg
Sulpiride	200 mg
Thioridazine	100 mg
Trifluoperazine	5 mg
Zuclopenthixol	25 mg
<i>Depot</i>	
Chlorpromazine	100 mg/day
Flupenthixol decanoate	20 mg/week
Haloperidol	25 mg/week
Pipothiazine palmitate	12.5 mg/week
Zuclopenthixol decanoate	100 mg/week

Table 2. Comparison of mean chlorpromazine equivalents for 1994 and 1996

	Mean chlorpromazine equivalents (mg/day)		P
	Excluding p.r.n. (range)	Including p.r.n. (range)	
1994 (n=161)	865 (25–6133)	1359 (50–7550)	<0.001
1996 (n=193)	713 (20–5833)	1138 (20–6433)	<0.001

Table 3. Number of patients prescribed high-dose antipsychotics in 1994 and 1996

	Number of patients prescribed >1000 mg chlorpromazine equivalents/ per day		
	Excluding p.r.n. (%)	Including p.r.n. (%)	
1994 (n=161)	40 (25%)	76 (47%)	$\chi^2=10.30$, d.f.=1, $P<0.005$
1996 (n=193)	39 (20%)	76 (39%)	$\chi^2=26.45$, d.f.=1, $P<0.001$

The study

The surveys took place within Nottingham Healthcare's hospital in-patient and dispersed rehabilitation sites, which have replaced the larger mental hospital-based services. The prescription cards of all adult acute, rehabilitation and open forensic ward psychiatric in-patients were examined on two occasions, eight and 32 months after publication of the Consensus Statement. Data collected included daily dose of regular oral and depot medication and maximum daily dose of p.r.n. medication prescribed (but not necessarily given). Demographic information, including diagnosis and whether compulsorily detained, was obtained separately. High-dose antipsychotic medication prescribing was defined as a total daily dose (oral and depot) >1000 mg chlorpromazine equivalents (calculated from BNF (Number 33, March 1997) and Bazire (1997), see Table 1). All consultants were given written information about their prescribing following the 1994 survey and the results presented to the local postgraduate meeting.

Findings

One hundred and sixty-one of 200 (81%) patients in 1994, and 193 of 230 (84%) in 1996, were receiving regular antipsychotics. There were no significant differences between the two years for gender (62 v. 63% male), mean age (37 v. 39 years) or proportion of patients detained under the Mental Health Act 1983 (36 v. 34%).

Table 2 shows a comparison of the mean regular chlorpromazine equivalents for each year and Table 3 lists the number of patients prescribed high-dose antipsychotic medication, excluding and including p.r.n. medication for

each year. Actual dispensing of p.r.n. medication occurred on seven occasions (4% of patients) in the 1994 survey and 10 occasions (5% of patients) in the 1996 survey.

Comment

Overall mean chlorpromazine equivalent doses have reduced since 1994 for all psychiatric in-patients in Nottingham. There may be several reasons for this. First, this may reflect an increased awareness of the potential hazards of prescribing antipsychotics at high dose, both from the Consensus Statement and from feedback following our 1994 survey. Second, prescribing of atypical antipsychotic drugs (clozapine and risperidone) showed a small increase between the surveys (5.5% in 1994 to 7.8% in 1996) although it was not clear from our data if the group taking atypical antipsychotic drugs in the 1996 survey had previously been prescribed high-dose antipsychotic medication treatment. Third, the data also reveal considerable variation in prescribing practices between different consultant teams present in both surveys and between prescribers present in only one of the surveys which may have influenced the total mean dose. The effect of this variable on dose of antipsychotic prescribed is currently subject to further analysis.

Although also reduced, a notable number (20 v. 25% in 1994) of psychiatric in-patients were still regularly receiving antipsychotic doses in excess of 1000 mg chlorpromazine equivalents per day in 1996. This figure is higher than recent in-patient surveys from other areas (Torkington *et al.*, 1994; Warner *et al.*, 1995) and may have two explanations. Our survey included a number

of rehabilitation and open-ward forensic patients (approximately 45% in each year) who often receive higher doses than general psychiatric patients. Because of our largely community-based service, it might be speculated that those patients actually requiring hospital admission are more severely ill, reflected by higher rates of compulsory admission (Singh *et al*, 1998) and have greater levels of behavioural disturbance prompting prescribing of higher doses of medication but not necessarily benefiting from them.

When p.r.n. prescribing is also taken into account, this results in a statistically significant increase, both in the mean dose in chlorpromazine equivalents per day and in the number of patients who fall into the 'high-dose' category for each year. This is usually as a result of prescribing by junior (often non-MRCPsych) psychiatrists and contrary to the Consensus Statement guidelines. Although the actual dispensing of p.r.n. medication occurs infrequently (4–5% of p.r.n. prescriptions) and suggests that the issue of injudicious prescribing is in practice less clinically relevant than initially expected, we believe that it still reflects a hidden potential for the unwitting prescription of high doses.

It is clear from the Consensus Statement that there is little evidence from controlled clinical trials for the superior effectiveness of high-dose antipsychotic medication prescribing, even for behavioural control. Therefore the addition of p.r.n. doses to already high-dose prescribing would appear to rarely have any clinical justification. We would recommend regular surveys and audit of antipsychotic prescribing and the development of local guidelines for junior staff on good prescribing practice. These guidelines should address, in particular, the area of cautious p.r.n. prescribing by juniors and monitoring by consultants. We would also encourage identification of those patients on high-dose antipsychotic

medication and suggest frequent medication reviews involving pharmacists.

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Rationale behind psychiatrists' choice of drug

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Aims and method The study investigated the reasons that influence medical staffs' choice of a specific drug over another given the same clinical situation, by use of a questionnaire-based survey. The study population was 88 clinicians of various ranks, at psychiatry units in National Health Service university and district general

hospitals in Greater Manchester. Responses in the factors: personal experience, scientific evidence, influence from colleagues, economic consideration, influence by drug representatives, ward or unit policy and other in choice of prescription, were the main outcome measures.