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The frequency of prescribing of neuroleptic drugs

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The frequency with which a given drug is prescribed (the number of doses per day) should be influenced by several factors. First, frequent prescribing is likely to be more expensive and to consume more resources. About a third of the time spent by psychiatric nurses in interaction with patients is devoted to technical activities such as drug administration (Altschul, 1972). Second, it is especially difficult to persuade psychiatric patients to take medication as prescribed whether as in-patients or as out-patients so treatment regimens should be kept as simple as possible. There is evidence that compliance is better with once or twice daily regimens than with a four times daily regimen.

Finally, pharmacokinetic properties of the drug determine the lower limit of dosage frequency. Neuroleptic drugs have relatively long half lives. Kendell (1988) stated: "Except in the first 48 hours there is no point in giving any phenothiazine, orally or intramuscularly, more frequently than twice a day. All these drugs have a half-life of 12 hours or more, so that three times a day or six-hourly prescribing is simply a waste of valuable nursing time in in-patients and a pointless imposition on out-patients." Such prescribing is "a public display of pharmacological ignorance".

As more frequent prescribing seemed commonplace on our wards (the third author realised he had been displaying pharmacological ignorance publicly for years!) we decided to make dosage schedules the subject of medical audit.

The study

We used the peer review method (Royal College of Psychiatrists, 1989), comparing consultant teams within our local psychiatric hospital. We adopted Kendell's criterion for oral neuroleptic prescribing practice, namely less than three doses a day. Prior to starting the study, we set an arbitrary minimum standard of 50% of dosage schedules complying with Kendell's criterion.

The study was performed in all acute and long-stay, adult and care of the elderly wards within Leverndale Hospital. All in-patients, irrespective of age, sex and diagnosis, currently on regular doses of oral neuroleptic drugs, were included.

Drug prescription cards for each patient were scrutinised and the dosage schedules for each oral neuroleptic currently prescribed were noted. Data were gathered according to the consultant team responsible for each prescription. Each consultant was then given a score. The numerator of that score was the number of individual oral neuroleptic prescriptions which corresponded to Kendell's criterion of a dosage schedule of less than thrice daily. The denominator was the total number of prescriptions for oral neuroleptic drugs written for that same team. The score for each team was expressed as a percentage.

Two exceptions to this scoring were made. First, as Kendell points out, initially high frequency dosage schedules may be necessary to achieve rapid accumulation of a newly prescribed drug. We therefore included in the numerator any prescription begun less than 48 hours previously, even if prescribing was more frequent than twice a day. Secondly, since large doses of chlorpromazine may cause postural hypotension, we included in the numerator any prescription involving total daily doses in excess of 400 mg for patients younger than 65, and 200 mg for patients aged 65 years and over.

The first survey was carried out in January 1991, the data being collected over a single day to give a point prevalence. The following month Dr Hughson presented these data at the regular medical audit meeting. Full discussion of the findings, and their implications for clinical practice took place among this peer group. The initial results were presented informally as a "pass" or "fail" for each consultant team, according to whether the 50% criterion had been met. The consultants responded with good humour and all agreed with the pharmacological principles of the audit. However, grounds for diverging from Kendell's criterion in certain cases (for example, in elderly patients) were discussed. The consultants were agreed that the survey should be repeated to complete the audit cycle. The repeat survey took place in January 1992, again the data being collected in a single day. Between the surveys, there had been two changes of junior medical staff, but consultant responsibility remained the same.

Data were analysed by χ^2 tests to determine variation between consultant teams for each audit, as

well as to identify changes in prescribing practice between the two surveys.

Findings

In the first survey, the total numbers of prescriptions for the eight consultant teams were 18, 35, 15, 71, 14, 44, 22 and 45. The corresponding scores (%) were 39, 46, 47, 48, 50, 55, 59 and 67. When the audit was repeated, the total numbers of prescriptions were respectively 26, 41, 7, 74, 16, 41, 16 and 26. The corresponding scores (%) had risen considerably to 62, 71, 100, 85, 75, 93, 63 and 100.

Neither set of results revealed a statistically significant variation between scores for different consultant teams. However, a significant, positive, change in scores (52% to 81% for all teams combined) occurred between the two audits ($\chi^2 = 47.1$; d.f. = 1; $P < 0.001$). This represents a real change in prescribing practice in the hospital, with every team now adhering to the "twice a day or less" dosage schedule in over 60% of prescriptions, and two teams prescribing thus for every patient. The smallest change in score was displayed by a team which is responsible solely for care of the elderly mentally ill.

Comment

This audit fulfilled the essential criteria of being easy to perform and leading to change in practice ("closing the feedback loop") (Smith, 1990). Our study followed "one full turn" in the audit cycle and could therefore be defined as a "full audit" according to the criteria defined by Derry *et al* (1981). Since changes in prescribing practice might follow changes in medical personnel, the cycle might be repeated to ensure maintenance of standards. Furthermore, the high scores obtained by most consultant teams indicate that we might negotiate a higher minimum standard of, say, 60%.

During discussion, reasons given for prescribing more frequent, smaller doses included the avoidance of dose-related side-effects or the need to swallow large numbers of tablets at once. However, given the large changes in prescribing practice that were made by most teams in a relatively short time, we think it likely that their patients' tolerance of larger individual doses was perhaps greater than anticipated. On the other hand, the smaller change displayed by the team responsible for the elderly might indicate a higher perceived risk of, or actual occurrence of, side-effects, such as postural hypotension, on less frequent dosage schedules within the elderly in-patient group (However the reason for that team's lower adherence to the proposed dosage schedule is not known).

The implications for the patient of changes in prescribing practice warrant consideration and perhaps further study. Although we did not formally examine the attitudes of patients to our project, the consultant teams agreed to monitor in an informal way the clinical effect of any changes in dosage schedule, and they reported no particular difficulties. One individual example of "consumer response" was that of a patient who wanted her chlorpromazine prescribed four times daily simply because she preferred it that way. In such cases, pharmacological exactitude may be foregone to acknowledge a patient's desire for "more frequent caring". Not only the tablet itself, but also its administration within a hospital setting, might be important to the patient. Perhaps, unfortunately, drug rounds can offer a precious opportunity for nurse-patient interaction on a busy ward (Altschul, 1972). Ideally, however, staff should be allowed time free from such technical duties to devote to more active, personal involvement with patients. Certainly, the informal response from ward nurses to the aims of our project was generally favourable.

Conclusion

Audit of the frequency of prescribing neuroleptic drugs to in-patients within a large psychiatric hospital resulted in dosage schedules more closely in accord with pharmacological principles. We hope that improved compliance and conserved human and material resources will result.

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References

ALTSCHUL, A. T. (1972) *Patient-nurse Interaction: A study of interaction patterns in acute psychiatric wards*. Edinburgh & London: Churchill Livingstone.

DERRY, J. *et al* (1991) Auditing audits: the method of Oxfordshire Medical Audit Advisory Group. *British Medical Journal*, **303**, 1247–1249.

KENDELL, R. E. (1988) Schizophrenia. In *Companion to Psychiatric Studies* (eds R. E. Kendell & A. K. Zealley). Edinburgh & London: Churchill Livingstone.

ROYAL COLLEGE OF PSYCHIATRISTS (1989) Working Party of the Royal College of Psychiatrists: preliminary report on medical audit. *Psychiatric Bulletin*, **13**, 577–580.

SMITH, T. (1990) Medical audit. Closing the feedback loop is vital. *British Medical Journal*, **300**, 65.

A full list of references is available on request to Dr Hughson.