

R P D Cooke and colleagues offer further supportive evidence for the adequacy of single doses of gentamicin in febrile neutropenic patients. Their approach of halving the dose if the trough concentration of gentamicin is 1-2 mg/l may be overcautious, since serum concentrations of aminoglycosides have not been shown to have much predictive value for efficacy or toxicity.<sup>5</sup>

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- 1 Marik PE, Lipman J, Kobilski S, Scribante J. A prospective randomized study comparing once- versus twice-daily amikacin dosing in critically ill adult and pediatric patients. *J Antimicrob Chemother* 1991;28:753-64.
- 2 Viganò A, Principi N, Brivio L, Tommasi P, Stasi P, Villa AD. Comparison of 5 milligrams of netilmicin per kilogram of body weight once daily versus 2 milligrams per kilogram thrice daily for treatment of gram-negative pyelonephritis in children. *Antimicrob Agents Chemother* 1992;36:1499-503.
- 3 Elhanan K, Siplovich L, Raz R. Gentamicin once-daily versus thrice-daily in children. *J Antimicrob Chemother* 1995;35:327-32.
- 4 Marik PE, Havlik I, Monteagudo FSE, Lipman J. The pharmacokinetics of amikacin in critically ill adult and paediatric patients: comparison of once- versus twice-daily dosing regimens. *J Antimicrob Chemother* 1991;27 (suppl C):81-9.
- 5 McCormack JP, Jewesson PJ. A critical reevaluation of the "therapeutic range" of aminoglycosides. *Clin Infect Dis* 1992;14:320-39.

### Exposure to aminoglycosides should be monitored during treatment

EDITOR,—In her commentary on Michael Barza and colleagues' meta-analysis of whether aminoglycosides should be given in single or multiple daily doses, Fiona Smaill advocates once daily dosing.<sup>1</sup> We agree with her but believe that her recommendation not to monitor aminoglycoside concentrations routinely is ill conceived. Opinion on this matter will depend on underlying beliefs and assumptions. If you currently do not believe in monitoring during multiple daily dosing (an unusual stance) then it may be reasonable not to monitor during once daily dosing. If, however, you believe—as we do<sup>2</sup>—that aminoglycoside toxicity is related to total exposure to aminoglycosides then monitoring in some form seems as necessary with once daily dosing as with multiple daily dosing. Only the mode of monitoring needs to be considered.

The authors of the meta-analysis suggest that there is less need to monitor peak concentrations during once daily dosing.<sup>1</sup> We agree that, because peak concentrations during once daily dosing will always be higher than those during multiple daily dosing with the same total daily dose, there is perhaps less need to monitor peaks from the standpoint of efficacy. We think, however, that some index of exposure to aminoglycosides should be monitored to avoid excessive dosing. We have seen nephrotoxicity and ototoxicity occur when patients were not monitored in the early period. In our institution we estimate the area under the curve from a peak concentration and a mid-dose concentration (6-14 hours after dosing) to indicate exposure.<sup>3</sup>

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- 1 Barza M, Ioannidis JPA, Cappelleri JC, Lau J, Smaill F. Single or multiple daily doses of aminoglycosides: a meta-analysis.

*BMJ* 1996;312:338-45. [With commentary by F Smaill.] (10 February.)

- 2 Barclay ML, Begg EJ. Aminoglycoside toxicity and relation to dose regimen. *Adverse Drug React Toxicol Rev* 1994;13:207-34.
- 3 Begg EJ, Barclay ML, Duffull SB. A suggested approach to once-daily aminoglycoside dosing. *Br J Clin Pharmacol* 1995;39:605-9.

### Twin methodology is not always easily understood

EDITOR,—Nick P Thompson and colleagues' report of their twin study looking at the effects of genetics versus the environment in inflammatory bowel disease would have benefited from being reviewed by someone doing research into twins and being revised according to his or her suggestions.<sup>1</sup> The authors obviously cannot do anything about the bias due to ascertainment, since no population based British twin registry exists. They discuss this appropriately. Other mistakes in the paper, though, could have been corrected easily.

For example, the authors state that their table shows concordance rates, whereas in fact it shows only the crude numbers of pairs, not the rates. Furthermore, when mentioning concordance rates the authors do not make clear which of the possible concordance rates they are talking about. In twin research we are usually dealing with at least two concordance rates. The pairwise rate is the proportion of concordant pairs and is used for the comparison between monozygotic and dizygotic twin pairs. This will answer the question: Is the disease inherited at all? The probandwise rate is the proportion of affected cotwins of probands and is comparable to the risk of recurrence in other relatives. This answers the question: Given that I have an affected cotwin, what is my own risk of being affected? In twin research it is usually the pairwise concordance rates that are used to compare monozygotic and dizygotic twins, while estimates of the relative risk or odds ratio are used in twin-control studies.

It is a pity that the authors stopped after concluding that the monozygotic twin pairs were more likely to be concordant. It would have been interesting if they had tried to estimate heritability and the risk of recurrence (that is, probandwise concordance rates).

As a twin researcher myself and supervisor of several projects on various diseases in twins, I know that twin methodology is not always easily understood. All the Scandinavian countries have population based twin registries with researchers experienced in both the somatic and psychiatric aspects of twinship. In both England and the United States there are also twin researchers with experience in psychiatry, psychology, and diseases such as diabetes and rheumatoid arthritis. All could have helped to improve this paper.

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- 1 Thompson NP, Driscoll R, Pounder RE, Wakefield AJ. Genetics versus environment in inflammatory bowel disease: results of a British twin study. *BMJ* 1996;312:95-6. (13 January.)

### Project has been set up to explore ways of preventing wastage of doctors

EDITOR,—The Medical Careers Research Group has reported the severe wastage of doctors from the NHS.<sup>1</sup> The best estimate of 16% for doctors not working in medicine in Britain, plus the 4.6% of doctors working only outside the NHS, gives a total of one in five doctors lost to the NHS at any time.

In addition, the rate of drop out of medical students was increased in 1994, at 15%.<sup>2</sup> This means that the effective output for the NHS is about a third less than the intake of British medical schools. At the same time, staffing difficulties are apparent in many specialities.

The North Western region's "Don't waste doctors" project has been set up to explore solutions to these problems. Research shows that half of women doctors want part time work at some point in their career and that the proportion of male doctors interested in part time work is increasing.<sup>3</sup> Currently, part time training posts can be difficult to secure owing to budgetary limitations and the interpretation of "well founded individual reasons" (for wanting part time work) as meaning "has a young baby." This excludes many doctors who need flexible training. The "Don't waste doctors" project proposes the radical idea that part time training posts can be an integral part of a trust's posts; they provide reasonable hours for doctors needing part time work, lead to the retention of skilled doctors in their preferred speciality, and improve teams' continuity by resulting in longer serving junior doctors.

In the project we are assessing the needs of doctors in the north west who are not working for the NHS and we are researching what would bring them back. We have already found a number of doctors interested in returning to medicine. Through liaison with the postgraduate department a retraining scheme is being developed, and local trusts will be encouraged to advertise more flexible timetables for training posts in specialities with staffing difficulties. It would be interesting to know how many of the women working part time in the Medical Careers Research Group's study chose their speciality for positive reasons and how many chose it for the negative reason that it was the only one in which less arduous hours were available.

The problem of wastage must be addressed for the sake of the doctors now working in an understaffed NHS, for doctors who believe that they can no longer work in medicine, and for patients. Increasingly, the quality of doctors is under scrutiny from the public, who want less stressed doctors working in their chosen area of interest.

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- 1 Lambert T, Goldacre M, Parkhouse J, Edwards C. Career destinations in 1994 of United Kingdom medical graduates of 1983: results of a questionnaire survey. *BMJ* 1996;312:893-7. (6 April.)
- 2 Parkhouse J. Intake, output, and drop out in United Kingdom medical schools. *BMJ* 1996;312:885. (6 April.)
- 3 Allen I. *Doctors and their careers—a new generation*. London: Policy Studies Institute, 1995.

### ABC of Urology

#### Comments on managing urinary tract infection in children were inadequate

EDITOR,—We were disappointed by the section on managing urinary tract infection in children in Chris Dawson and Hugh Whitfield's ABC of Urology.<sup>1</sup> There is widespread agreement on most aspects of the diagnosis, investigation, and treatment of such infection in childhood; these were missing from this article. The current consensus was summarised by a Royal College of