

LETTERS

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Antibiotics, sore throats and rheumatic fever

Sir,

In trying to verify for a general practitioner colleague the assumptions on which Howie and Foggo base their conclusion that antibiotics make little impact on the development of acute rheumatic fever (*May Journal*, pp. 223-224), I almost lost sight of their main methodologic flaw: population size. The estimated incidence of acute rheumatic fever after untreated streptococcal sore throat is so small (10 per 396 000 patients) that to show a 50% lower incidence among treated patients would require treated and untreated populations of about three million each and the Edinburgh study would have had to span a period of 35 years instead of four years. Even to show a reduction as large as 90% would need study populations twice as large as the authors used.

Inadequate sample size is a problem of many otherwise well-conceived and carefully executed epidemiologic studies and prevents them finding significant differences even when differences between treated and untreated groups do exist. The problem is most troublesome when the endpoint sought is an extremely rare event (as in the development of acute rheumatic fever), where extremely large denominator populations are needed for prospective or historical prospective studies. The case-control or retrospective study was designed for rare-event questions, and although it is not without its own methodologic problems, would seem to be the approach best suited for these questions.

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Sir,

We were interested to read Dr Slater's comments on our article. Our study was an attempt to estimate risks, and this would not have been possible using the case-control approach, which is more suited to studies investigating aetiological factors.

It is almost certainly impossible to mount the single study which would be necessary to comment authoritatively on the interrelationship between antibiotics for sore throats and the development of rheumatic fever, not least because of cultural variations in incidence, possible alterations in pathogenicity of streptococci across time and place, and differences in habits of illness labelling and recording by general practitioners. The whole issue of non-presentation of index illnesses is yet another feature which makes both prospective trials and case-control studies every bit as problematic as the methods we used.

What we did and concluded is simple and worth restating simply. We found that at present in Scotland, the risk of a child developing post-sore-throat post-streptococcal rheumatic fever requiring hospital admission is 0.6 per 100 000 children per year — of the order of one event in 10 general practitioner careers. Our estimate of risk suggests that the event is roughly as likely to follow an antibiotic treated streptococcal sore throat as a streptococcal sore throat either not treated with an antibiotic or not presented to a doctor.

We believe that doctors want information of this kind to be available to them when they are formulating individual decisions as well as broad strategies. We may have to live with the reality that separating cause from effect is all too often impractical and difficult when it seems it should be easy. Other work we

have reviewed confirms the legitimacy of our general conclusions.¹

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Reference

1. Foggo BA. Sore throat, antibiotics and rheumatic fever. *Family Practice* 1985; 2: 101-107.

Comparison of standards in training and non-training practices

Sir,

Dr Baker needs to be congratulated on an excellent article comparing 69 training practices with 81 non-training practices (*July Journal*, pp. 330-332).

We have reached a point in general practice training where there are many more training practices than there are vacancies in general practice for our trainees to take up. Looking at some of the information presented in Dr Baker's article, it is surprising that over 30% of training practices were involved in a deputizing system. It was also surprising to learn that over 30% of the training practices involved in the study did not involve themselves in intrapartum care.

If we are to encourage our trainees to give personal and continuing care, irrespective of age, sex, illness or the time of day, then I suggest that training practices should be leading by example.

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