which children adenoidectomy should be recommended.

All the children in my study were referred on account of hearing difficulty. They were a highly selected population with well established effusions of the middle ear. The chosen end point when fluid could no longer be seen in the unoperated ear with the pneumatic otoscope replicates clinical practice in an observer whose diagnostic accuracy had been previously validated. It will be interesting to evaluate the tympanometric and audiometric data, but I doubt that many practising otolaryngologists would rely solely on these measurements in preference to findings on otoscopy, particularly for the younger children in the study. The results of the present work confirm the need for similar prospective randomised studies to evaluate treatment methods for this common condition.

The data referred to by Dr Browning are available and are currently being analysed. I specifically addressed only the problem of adenotonsillectomy and adenoidectomy in relation to glue ear because these operations contribute most appreciably to the morbidity and mortality associated with management of the condition. The cases investigated in the study were highly selected on the grounds of appreciable subjective hearing loss and results of audiometric and impedance studies.

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Activity after myocardial infarction

SIR,—The leading article by Dr Peter Carson (7 January, p 1) highlights the contribution of an exercise programme to the rehabilitation of patients after myocardial infarction but plays down the importance of attempts to identify patients at higher risk of death or further infarction.

We know that in the first year after infarction approximately one in 10 will die and a further 5% will suffer from further infarction. Using exercise testing we can identify a subset of patients with residual ischaemia (about 25% of all patients after infarction) who have a relatively high risk—15-20% mortality in the first year¹⁻⁴—and who should be considered for further investigation with a view to bypass surgery or coronary angioplasty. A subset at low risk and with a good prognosis (approximately 3% mortality at one year) who may require no treatment can also be identified.

The development of ST depression on exercise, the exercise workload achieved, and the response of blood pressure to exercise all contribute to the predictive power of the test.

Exercise testing early after infarction can be undertaken safely and is desirable for two reasons—firstly, there is evidence that earlier testing is more predictive of prognosis than late testing,⁵ and, secondly, mortality after infarction is highest in the first three months. Exercise under supervision just before or shortly after discharge from hospital can also help to restore a patient's confidence and contribute to rehabilitation.

Proof of a reduction in mortality and rate of reinfarction due to early revascularisation surgery has not yet emerged,⁶ but the evidence

of benefit in men with angina and multiple vessel disease suggests that such a reduction is likely.

Early exercise testing after infarction should be possible in most hospitals and is a helpful guide to further management.

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¹ Akhras F, Upward J, Scott R, Jackson G. Early exercise testing and coronary angiography after uncomplicated myocardial infarction. *Br Med J* 1982;284:1293-4.

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⁵ DeFeyer PJ, Van Eenige MJ, Dighton DH, Visser FC, de Jong J, Roos JP. Prognostic value of exercise testing, coronary angiography and left ventriculography 6-8 weeks after myocardial infarction. *Circulation* 1982;66:527-36.

⁶ Norris RM, Agnew RM, Brundt PW, et al. Coronary surgery after recurrent myocardial infarction: progress of a trial comparing surgical with non-surgical management for asymptomatic patients with advanced coronary disease. *Circulation* 1981;63:785-92.

Dihydrocodeine overdose treated with naloxone infusion

SIR,—Dr S G Parker and Dr David G Thomas (19 November, p 1547) cite two further cases of possible opiate poisoning in response to Dr Nancy Redfern's recent report (10 September, p 751), though in neither case were supporting analytical data available. It should be noted that both of these patients received initial boluses of naloxone. None the less, Dr Parker and Dr Thomas conclude that "continuous naloxone infusion is a safe and effective treatment for opiate overdose and . . . may be preferable to intermittent boluses as potentially fatal respiratory depression is less likely to occur."

It is essential to present analytical data on plasma drug concentrations if we are to learn from clinical experience. The second patient described by Dr Parker and Dr Thomas was thought to have ingested amitriptyline in addition to dihydrocodeine and it is therefore impossible to attribute the ensuing respiratory depression to dihydrocodeine alone. It is equally misleading for Dr Parker and Dr Thomas to attribute reversal of respiratory depression to the naloxone infusion when plasma concentrations of the drugs taken in overdose may have fallen below critical levels. The effect of the naloxone infusion is therefore speculative.

In our experience of treating symptomatic opiate poisoning an infusion of naloxone alone is not "safe and effective" but hazardous unless it follows an adequate intravenous bolus of naloxone to resuscitate the patient. Dr Parker and Dr Thomas gave an initial dose of only 0.4 mg naloxone to an unconscious patient who had supposedly ingested 1800 mg dihydrocodeine. Such a dose is inadequate and indeed the patient remained unconscious and subsequently deteriorated, though this may have been due, in part, to the effect of other drugs. The fact that naloxone is dispensed in 0.4 mg ampoules does not mean that this constitutes a resuscitative dose; patients often require considerably more than this. We have on occasions had to use up to 15 mg naloxone

within 30 minutes of presentation to maintain life.

Continuous infusion of naloxone may engender complacency in those managing a seriously poisoned patient. It is no substitute for frequent observation and appropriate intervention. By definition, effective doses of naloxone are those adequate to competitively displace an opiate agonist from its receptors and thus will depend on the concentration and receptor affinity of the individual drug. Attempts to suggest infusion rates are thus misguided and are likely to result in under-treatment of the seriously poisoned patient and overtreatment, with an expensive drug, of those less intoxicated.

In conclusion, we recommend that adequate doses of naloxone, not less than 1.2 mg as an intravenous bolus, be given initially and repeated as necessary for the treatment of symptomatic opiate poisoning. Finally, in our preoccupation with naloxone we must not forget that patients who fail to maintain their own ventilation may well require it to be maintained mechanically.

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*.*The authors reply below.—Ed, *BMJ*.

SIR,—The efficacy of naloxone in the reversal of the effects of opiate agents is well established. Although naloxone is currently approved only for intermittent parenteral use, constant intravenous infusion of such a short acting (and safe) agent would appear to be more appropriate in the management of overdose with long acting opiates. Reports on the use of the technique are few, and infusion rates have yet to be conclusively established.

We reported two cases in which an opiate overdose was managed by naloxone infusion after reversing respiratory depression with a bolus dose (1.2 mg and 1.6 mg). Ventilatory monitoring was continued in an intensive treatment unit. The purpose of our letter was to draw attention to a safe and effective technique. It was never our intention to propose a rigid infusion protocol and we suggested that "the infusion rate can be adjusted to maintain a satisfactory arterial P_{CO_2} ." Our management was established within the context of an acute medical emergency. Inevitably our results (and therefore the conclusions drawn from them) have to be regarded as speculative and consequently will not withstand detailed scientific criticism. Nevertheless, we consider the infusion technique to be safe (if adequately monitored), effective, and worthy of further study.

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Griffiths inquiry: a personal perspective

SIR,—Professor Roger Dyson (21 January, p 255) makes a brave and valuable attempt to decode the cryptic language deployed by Mr Griffiths. Even so, I must confess that I am still uncertain of what power the general