

car to pieces and finding that a gearbox left lying in the road goes neither very far nor very fast.¹ The strict diagnosis of labour is not the final component of the management of labour—that is delivery of the placenta; rather it is the first component, both in chronological sequence and in importance.² The fact that 40% of women diagnosed as not being in labour returned promptly in unequivocal labour implies that the remaining 60% were spared inadvertent and unnecessary induction of labour at that time.

Artificial rupture of membranes is done to confirm the presence of clear liquor as oxytocin is dangerous if no liquor can be seen or if meconium is present. Speeding up established labour has never been claimed to confer more than marginal benefit. Care is taken not to use this method of inducing labour without good indication. Thornton and Lilford discuss use of oxytocin with amniotomy on the basis of three trials, for which meta-analysis gives inconclusive results. Of the two peer reviewed trials, the first concluded, after stepwise logistic regression, that oxytocin is effective. The second³ used oxytocin in a dose so low that 20 hours would be needed to reach the Dublin hospital's target dose, intended to ensure delivery within 12 hours.

Turner *et al* observed over 1000 consecutive labours at Northwick Park Hospital managed actively.⁴ Changes in rates of caesarean section and normal delivery had significance values of between $P < 0.05$ and $P < 0.0001$. The implication that changes of this order of significance arose as the result of poor randomisation or some factor other than change in practice when an entire obstetric population was studied strains credulity to its limits.

The National Maternity Hospital in Dublin has records of labour in over 200 000 consecutive women having their first baby. These data may be observational and non-randomised but cannot easily be dismissed, certainly not without explanation.

Thornton and Lilford's meta-analysis is seriously flawed. Meta-analysis may be useful for searching through piles of chaff, looking for missed grains of wheat, and thereby for examining issues on which trials have been inconclusive. In this meta-analysis the chaff seems to have been added back to the wheat.⁵

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Strict definition of labour is essential

EDITOR,—In their critique of the package of interventions that constitute active management of labour James G Thornton and Richard J Lilford point out that controlled trials of these interventions have failed to show a reduction in operative delivery similar to that seen in Dublin, yet they fail to offer a hypothesis to explain those results.¹ In dismissing the approach piecemeal they leave the shortest part of their analysis to perhaps the most important part of the regimen: that the women should be in labour.

The definition of labour in the original papers was strict.² It could be argued that the success of

the package of interventions depends on the reduced rate of false positive diagnoses of labour. The 40% of women who return in labour 24 hours after initial assessment may have been in the latent phase and so naturally preparing themselves for labour. Being adequately established in the active phase of labour may be the factor that has led to the results in the hospitals involved. If the randomised trials cited did not use such a strict definition of labour then they were probably actively managing something entirely different; this alone may explain the failure of the trials to match the outcomes in the National Maternity Hospital.³

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WHO partogram helps

EDITOR,—James G Thornton and Richard J Lilford's review of active management of labour¹ was accepted for publication too late for it to include the results of the multicentre trial of the World Health Organisation partogram.² Although not a randomised controlled trial (it would be impossible to conduct such a trial free from bias), this trial of the impact of use of the partogram with an agreed protocol for managing labour on the outcome of labour is important because of its scientific rigour, the fact that it was a multicentre study, and, in particular, the large number of women in labour included (35 484). Its findings largely reinforce Thornton and Lilford's conclusions but add force to the argument for monitoring all labours with a partogram incorporating alert and action lines similar to Philpott and Castle's original design.³

The crucial factor in active management of labour is the timing of interventions, whether these be amniotomy, augmentation with oxytocin, caesarean section, or transfer to a central unit. A partogram is able to indicate the optimum timing of these. Before they introduced the WHO partogram all eight centres participating in the trial (in Indonesia, Malaysia, and Thailand) practised ad hoc management of labour, which varied from late amniotomy in conjunction with early oxytocin to early amniotomy combined with augmentation with oxytocin. The partogram was introduced with a protocol that defined labour strictly and encouraged delaying all interventions (except amniotomy) until the active phase action line was reached.

The results were a reduction in prolonged labour by 41% and in emergency caesarean sections by 3% despite a reduction in the number of labours augmented by oxytocin by 54%. A fall in the mean number of vaginal examinations during labour probably contributed to the 59% reduction in cases of postpartum sepsis. Intrapartum stillbirths and neonatal morbidity fell.

Although the trial protocol suggested that use of oxytocin should be delayed until the action line was reached, even this may be regarded as over-active management. Among those labours in which the action line was reached caesarean section was most likely if oxytocin had been started earlier, but the eventual mode of delivery was little influenced by the introduction (or not) of oxytocin when the action line was reached.⁴ Amniotomy once the active phase of labour was reached reduced the likelihood of progress in labour moving beyond the alert line. The necessity for and timing of transfer in delayed labour from a peripheral to a central unit

would be clarified by early amniotomy in the active phase.⁴

The participants in the WHO trial agreed that the partogram improved the discipline of and communication about management of labour and freed midwives' time; this may be an important element of the partogram's success as more time can be devoted to "companionship."

Thornton and Lilford's review and the WHO trial point the way towards effective management of labour worldwide. Both papers agree that reduced but timely intervention is the key to success.

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Authors' reply

EDITOR,—T H Bloomfield's and John F Stratton's analogy to cars, while colourful, is poor. Try ours. Imagine a successful motor racing team that claims to improve its cars' performance with a package of special fuel, oil, and tyres but also has expert drivers. Let us pretend that trials of all three components combined are impossible. Nevertheless, when other teams perform trials of the special fuel and oil separately and of both fuel and oil-combined they show no clear benefits, but trials of the tyres show definite advantages. The original team might still argue that the combination conferred a special advantage, but we believe that neutral observers would conclude that the tyres were the important factor.

Bloomfield is correct to remind readers, as we did, that the size and quality of the trials of oxytocin alone and of oxytocin combined with amniotomy, in contrast with those of the trials of routine amniotomy and professional support, are such that the overview's conclusions are insecure. More well conducted trials, including trials of different oxytocin regimens, are needed.

Observational data can be found to support all views, but we are glad to have an opportunity to remind readers of the problems with the study at Northwick Park Hospital.¹ Doctors there compared the rate of caesarean section in a selected group of nulliparous women managed actively with that in all nulliparous women who had delivered in the hospital over the preceding five years.

The controls were thus not matched for gestation, number of babies, or presentation; even if they had been, other changes may have been responsible for any real fall in the rate of caesarean section. Indeed, the rate also fell in multiparous women over the same period, although active management was not applied to that group. The apparently low P value is irrelevant since the question is not whether the fall was a chance effect but whether it was caused by the active management—and, if it was, by which component—or even by antenatal education.

We acknowledge that active management was originally introduced to reduce the duration of labour but contend that its present popularity derives from its effect on the rate of caesarean section. As we stated, in so far as active management consists of accurate diagnosis of labour, continuous professional support, and regular peer review we endorse it. We remain unconvinced,