Experimental Physiology

Correspondence

Contractility of the myometrium; the rationale for pharmacological intervention in preterm labour

Dear Sir,

In a recent article in your journal on oxytocin antagonists by Thornton *et al.* (2001; *Experimental Physiology* **86**, 297–302), the authors raise some points which we would like to comment upon.

Rationale for treatment of preterm labour. We agree with the authors that the condition preterm labour is multifactorial. The expression 'the syndrome of preterm labour' is in fact used. In some cases the use of oxytocin antagonists would be of limited value or indeed contraindicated (The Worldwide Atosiban *versus* the Beta-agonist Study Group, 2001; *British Journal of Obstetrics and Gynaecology* **108,** 133–142). However, in the case of very early preterm labour postponement of delivery by only a few days may be life saving or reduce the risk of serious fetal complications (Finnström *et al.* 1997; *Acta Pediatrica* **86**, 503–511).

The degree to which tocolysis reduces perinatal mortality or morbidity is a question which will probably never be answered, since most ethical committees would not accept a placebo-controlled study of the size that would be required. Furthermore, most obstetricians would not agree to perform such a study, now that effective and safe treatment is available. Finally, the evidence-based use of antenatal corticosteroids to reduce perinatal mortality and morbidity would add to the difficulties in determining the value of tocolysis in terms of these parameters (Crowley *et al.* 1990; *British Journal of Obstetrics and Gynaecology* **97,** 11–25). The question thus remains whether it is at all realistic to expect that a single intervention, administration of a tocolytic drug, in a multifactorial condition such as preterm labour can alone confer the perinatal benefits required. It is likely that a multiplicity of interventions, depending on the individual preterm labour case, will have to be considered in order to achieve the common goal of better infant outcome.

As the efficacy of the tocolytic drugs currently used is very similar, the choice of compound should be based on its safety profile (Norwitz *et al.* 1999; *New England Journal of Medidine* **341**, 660–666). In this regard atosiban offers very clear advantages.

Mechanism of action of atosiban. The authors are concerned that, given the combined action of atosiban on both the oxytocin and vasopressin V_{1a} receptors, it is not clear which receptor is inhibited during tocolysis. This question cannot be answered until more selective receptor inhibiting agents are available for clinical testing. Such agents are currently under investigation in our laboratory.

Meanwhile, the clinical evidence is clear. Atosiban has been proven to be at least as effective as the previously used β-adrenoceptor-stimulating drugs, but has a markedly improved safety profile.

Yours sincerely,

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