Ibuprofen for closure of patent ductus arteriosus

Ibuprofen may have advantages over indomethacin for closure of a patent ductus arteriosus (PDA). Although both drugs inhibit both cyclooxygenase I (COX I) and cyclooxygenase II (COX II), ibuprofen is a less potent inhibitor of COX I and, possibly for that and other reasons, has less effect on cerebral, mesenteric, and renal blood flow. In the *Fetal & Neonatal* edition of this journal (1997;76:F179–84), researchers in Belgium reported on a randomised trial involving 40 preterm infants in which ibuprofen was as effective as indomethacin but had less effect on renal function. They have now extended their observations in a larger series (Bart Van Overmeire and colleagues. *New England Journal of Medicine* 2000;343:674–81; see also editorial, *Ibid*:728–9).

A total of 148 babies (gestational ages 24–32 weeks) with respiratory distress syndrome and PDA were randomly assigned at age 2–4 days to three intravenous doses of either indomethacin (0.2 mg/kg 12 hourly) or ibuprofen (10 mg/kg first dose, then 5 mg/kg at intervals of 24 hours). Ductal closure occurred in 49/74 (indomethacin) *v* 52/74 (ibuprofen) (difference not significant). Urine output was assessed by bag urine collection and was significantly lower in the indomethacin group on days 3 to 7 after birth, during which time mean serum creatinine was also significantly higher in the indomethacin group. Oliguria (urine output 1 ml/kg/hour or less) occurred in 14 babies in the indomethacin group and five in the ibuprofen group. Necrotising enterocolitis occurred in eight (indomethacin) *v* four (ibuprofen) (not statistically significant) and babies with oliguria were significantly more likely to develop necrotising enterocolitis than those without oliguria.

In the accompanying editorial, it was pointed out that the babies in this trial were relatively mature (average 28 weeks) and the effectiveness of ibuprofen at lower gestational ages is uncertain. There is currently no suitable preparation of ibuprofen commercially available.

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