

ANTENATAL STEROIDS AFTER 34 WEEKS - WISE PRECAUTION OR UNNECESSARY RISK?

Prof PJ Steer

Imperial College London, Faculty of Medicine, United Kingdom

The landmark paper by Liggins and Howie in 1972 showed a significant reduction in the incidence of respiratory distress syndrome in infants less than 32 weeks gestation when mothers were treated with betamethasone for 2 to 7 days before delivery. A meta-analysis of 15 trials in 1996 confirmed this important finding. However John Newnham in 2002 was amongst the first to highlight the potentially adverse effects of steroids on the fetus, particularly on the developing brain. As the brain grows, the neurones migrate from where they are produced to their eventual position, and this migration is markedly inhibited by high-dose steroids. Studies in animals demonstrate a reduction in fetal brain growth, and in humans, there is evidence of reduced birthweight and some increase in behavioural disorders in childhood when antenatal steroids have been given. A particular problem has been the habit of giving repeated courses of steroids on a weekly basis, because the original studies showed an effect only up to 7 days after administration. By 1997 this policy was followed in 98% of UK maternity units. However, studies have shown this practice to have harmful side-effects without improving outcome, and the RCOG Greentop guideline number seven (October 2010) now says that repeat courses are not recommended. There is some evidence that even a single course can have long-term effects, however this is acceptable if mortality and morbidity are substantially reduced when birth occurs preterm. However, reports indicate that commonly between one third and two thirds of babies whose mothers receive antenatal steroids before 34 weeks actually deliver after this time, so the babies derive no significant benefit but are still exposed to potential long-term side-effects. Some workers even began to suggest giving antenatal steroids after 34 weeks, for example before elective caesarean section if this was done before 39 weeks. A recent study in developing countries showed that giving antenatal steroids to the mother increased mortality by 30% if the baby was above the 25th percentile for average birthweight, although fortunately this was from a relatively low base (Lancet. 2015 Feb 14;385(9968):629-39). A priority for research is therefore to predict more accurately those women who are actually going to deliver preterm, so that we can avoid giving antenatal steroids to mothers and babies who cannot benefit.