

## The anonymous blood donors

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The National Blood Transfusion service which relies on a large number of altruistic blood donor volunteers is unsurpassed. It has a tradition satirised in "The Blood Donor"<sup>1</sup> by the brilliant comedian Tony Hancock. After the initial blood test he protested that the 470 ml (8-10% of blood volume) to be removed from his circulation was "very nearly an armful". Of course the doctor was able to reassure him that a healthy individual could donate this amount of blood without ill effect and would quickly replace the volume. Hancock was reassured that after a short rest and some tea and biscuits he would be fine. There was a help number to call if he did not feel well.

But what if the arrangements were a little different? No test beforehand, no questions asked, no tea and biscuits, no help line and no measurement of the blood volume removed - which could be anything from 10% to 30% of your normal blood volume. This occurs in newborn babies every time the cord is clamped before the placental circulation has ceased. The volume lost to the baby is anything from 30 to 120ml. And these babies get no opportunity to rest. A newborn's body needs to undergo a lot of critical changes - not least transferring from placental to pulmonary respiration. And what if the baby has any symptoms such as feeling faint? There is no helpline for them to call and crying is usually just greeted with soothing sounds from Mum and Dad. Keeping quiet isn't much good either as this is sometimes interpreted as a sign of a "lazy baby" which needs to be stimulated to get it breathing and crying more vigorously. The only other measure is to give it some extra oxygen.

Worse still there is never any arrangement for the baby to get the blood back again. The blood trapped in the placenta is no longer available and is just flushed away.

Why is this practice encouraged? In the NICE

caesarean section guideline<sup>2</sup> the only evidence presented is a review article<sup>3</sup> (reference 402 in the guideline) in which the author clearly states that there is good evidence from 16 randomised controlled trials and 5 controlled trials that delayed cord clamping is beneficial and there is no evidence that it is harmful. The NICE conclusion is that more RCTs are needed to determine the effect of delayed cord clamping on neonatal outcomes including transient tachypnoea of the newborn and risk of maternal fetal transfusion in rhesus negative women for term and preterm births. What is a maternal fetal transfusion? If this means a transfer of maternal blood into the fetal circulation how will this affect rhesus negative women? On purely theoretical grounds only rhesus positive women with a rhesus negative neonate would be at any risk of such a transfusion, as this would stimulate the production of rhesus antibodies in the neonate.

In the more recent NICE guideline on intrapartum care<sup>4</sup> the evidence that immediate cord clamping is harmful was rejected on the grounds that none of the trials were carried out in this country. Since this guideline was confined to the management of term labour the evidence for the timing of cord clamping in preterm labour was not considered.

Immediate cord clamping is a requirement for measurement of cord blood gases recommended by the American College of Obstetricians and Gynaecologists.<sup>5</sup> Results can help defend allegations of malpractice. The Royal College of Obstetricians and Gynaecologists recommend cord blood gas tests for risk management purposes.<sup>6</sup>

Perhaps you think I'm being over dramatic? No-one disputes that immediate cord clamping at birth results in a smaller blood volume for the baby than waiting until the placental circulation has completely ceased at around

five minutes. The only dispute is exactly what constitutes the normal healthy blood volume for a baby. Those who have little faith in nature argue that immediate clamping and starting extra-uterine life with the lowest volume is the safest option. Logically this will ensure that haemoglobin levels tend to be low and the baby will be very unlikely to reach an abnormally high haemoglobin. Of course this depends on what is considered the normal range for haemoglobin. A minor degree of jaundice or hyperbilirubinaemia is physiological, a result of the fairly rapid breakdown of haemoglobin in the first weeks of life. Physiological jaundice is also commoner with breast feeding. So starting with less haemoglobin means there is less to break down, so physiological jaundice levels are lower. Symptomatic polycythemia and kernicterus are serious conditions, so it is argued that preventing the baby getting a full volume of blood at birth is a price worth paying to reduce the risk of these conditions. This hypothesis has never been proven. Hyper bilirubinemia and kernicterus are really pathological conditions associated with the anaemia of rhesus disease.

So are we going to continue surrendering our newborn babies as “blood donors”? Or should we not leave this decision to them later in life when they can freely consent, when they can safely cope with the temporary blood loss and when their blood will be fully utilised?

This concern was previously put in AIMS Journal in 2004 by retired neonatologist Professor Peter Dunn<sup>7</sup>. Of course there will still be a small volume of blood left in the placenta when all the circulation has ceased and this blood, surplus to requirement, can be used to provide valuable stem cells for bone marrow transplantation.

*Mr Hutchon is a consultant obstetrician in Darlington campaigning to stop routine immediate cord clamping.*

## References

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