depressed or sick. These observations were first reported in 1966–8[2] and have been reiterated many times since.[3] This hazard of immediate cord clamping, however, which may be largely obviated by a delay of 20–30 seconds, has been largely ignored by modern obstetric practice which is too often more interested in obtaining samples of umbilical arterial and venous blood between triple clamps than in understanding and preserving the normal physiology of childbirth.[4] There is more excuse for division of a tight nuchal cord but when possible this is best avoided by unlooping the cord over the baby's head.

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Top up transfusions in neonates

Sir,

The article by Roberton on 'Top up transfusion in neonates' was both stimulating and provocative.[1] Comments about lack of cooperation of pathology services in neonatal intensive care units are common and highlight a growing problem which needs to be addressed.

At present there are clear technical limits to reducing the quantity of blood required for most procedures. The idea that appropriate ultra microscopic methods are likely to be available in the near future appears to be rather optimistic but much can still be done and the requirement for blood transfusion, with its known and unknown dangers, can be limited. Dr Roberton did indeed refer to the problem of infants receiving blood infected with HIV in another Brisbane Hospital before the disease was recognised. The Royal Women's Hospital in Brisbane which has approximately the same number of neonatal intensive care patients has a lower rate of blood transfusion and a similar epidemic did not occur here. The reasons for the lower transfusion rate are not precisely known but include the following factors:

(1) A conservative requesting policy.

(2) A dedicated phlebotomy service. This ensures that the quality of the blood sampled is consistently high and repeat sampling is minimised.

(3) A dedicated neonatal laboratory service which allows close liaison with laboratory staff. Collection problems can be discussed easily.

(4) Use of manual methods which reduce the volumes required—for example, by predilution. The quality of staff training must be of a high standard to maintain high quality assurance.

Therefore even without a major technological advance, progress can be made to reduce the size of blood samples and limit the need for transfusion.

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Whole blood assay of theophylline concentrations using immunochromatographic stick

Sir,

Elias-Jones and colleagues have shown that in 77 pairs of samples the mean difference between theophylline concentrations measured by a new method and a standard method was small.[1] They have not, however, presented their raw data or the standard deviation (SD) of the mean differences. Provided differences within the range mean difference +2 SD to mean difference −2 SD would not be clinically important the two measurements could be used interchangeably, and so it is important to know that the SD is not unacceptably large. Bland and Altman have recently outlined a simple method for assessing agreement between two methods of clinical measurement and have demonstrated how this can be presented.[2]

It is also important to know how many comparisons were made at the upper and lower limits of the therapeutic range. The clinician not only needs to know how well the new method of assay of theophylline concentrations agrees with the standard method when concentrations are within the therapeutic range but also how well they agree in the potentially toxic and subtherapeutic ranges. Does the scatter of differences increase as the values increase, especially when values are >100 mmol/l? This information needs to be available before the new method of assay of theophylline concentrations can be substituted for a standard method.

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Hydrops fetalis due to abnormal lymphatics

Sir,

Windebank *et al* reported a case of hydrops fetalis due to abnormal lymphatics.[1] The baby, a girl, died at the age of 66 days. We are not aware of any other reports of this condition. Her parents have now had a second female child, with features similar to the first, born 16 months later. This baby died age 1 hour. We write to report her clinical history.

The parents are members of a travelling family. The mother's previous obstetric history was one pregnancy lasting 42 weeks and delivering a well male infant, weighing 3500 g, a miscarriage at 12 weeks, and the girl reported by Windebank *et al*. In the current pregnancy she first attended the antenatal clinic at 18 weeks, and serial ultrasound scans from 20 weeks showed fetal ascites and massive and increasing oedema. She went into spontaneous labour at 32 weeks. The membrane rupture delivery interval was 2 hours and 45 minutes, and she was delivered vaginally of a hydropic female infant whose weight was 3010 g, length 41 cm. As with the previous pregnancy the placenta was retained, requiring manual removal under general anaesthetic. It weighed 725 g and was pale and oedematous.

The baby's heart rate was 60/minute, but respirations were absent. She was intubated and ventilated. Intensive treatment, including external cardiac massage, failed to improve her condition, and she died at age 1 hour. Blood was obtained from an umbilical venous line. The baby's blood group was A positive, as was her mother's, haemoglobin concentration was 114 g/l and packed cell volume 42·0%; concentration of serum albumin was 18 g/l, serum sodium 130 mmol/l, serum urea 2·3 mmol/l, and serum calcium 2·31 mmol/l.

Postmortem examination showed massive ascites and large serous effusions in both pleural cavities with anatomically normal, but hypoplastic, lungs. Apart from oedema the urinary system appeared normal, as did the heart, the great vessels, the liver, and the spleen. Probably this baby had the same condition as her sister. It is of note that with each baby there was a retained placenta. This baby appears to have been the more severely affected.

Windebank *et al,* thought the parents not related.[1] Questioning of the family at the time of the birth of this child, however, established that the baby's paternal grandmother and maternal grandfather are first cousins. This was probably overlooked by Windebank *et al,* and this cause of hydrops fetalis may represent a previously unreported autosomal recessive condition. Perhaps it should be looked for in travelling families.

Reference

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Categories of neonatal care and nurse staffing

Sir,

The English National Board (ENB) for Nursing, Midwifery and Health Visiting recently circulated guidelines for staffing of neonatal units.[1] Their document recommends staffing levels in relation to three clinical categories of newborn care over and above normal care—namely, special care, high dependency care, and intensive care. The document cites the 1984 British Paediatric Association/British Association for Perinatal Paediatrics (BPA/BAPP) statement[2] on this subject and indeed includes their categories as an appendix. Unfortunately, there has been a major inaccuracy in transcription to which we feel attention must be drawn before further confusion arises. The BPA/BAPP document describes eight groups of infants deemed to be in need of intensive care with appropriate nurse staffing. The ENB document, on the other hand, restricts intensive care to just the first two of these groups: infants receiving respiratory support and those receiving total parenteral nutrition. The remaining six groups are described as belonging to a new category of high dependency care with a reduced level of nurse staffing. This is not only likely to cause confusion but is, in our view, ill advised as many of the infants in groups three to eight of the BPA/BAPP document require as much or more nursing attention as those in groups one and two. For example, they include babies with unstable cardiorespiratory disease, babies in the first 24 hours after major surgery, those of less than 30 weeks' gestation during the first two days, babies who are convulsing, those being transported between units, and those undergoing major medical interventions such as peritoneal dialysis or exchange transfusion. We very much hope the ENB will reconsider their document and hopefully bring it into line with the paediatric recommendation. At least if they do not do so it is important that everyone should be aware of the transcription error that has been made.

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Whole blood assay of theophylline concentrations using immunochromatographic stick.

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Notes