SAMJ

LETTERS ♦ BRIEWE

A simple urinary screening test to differentiate between upper and lower urinary tract haematuria

To the Editor: Haematuria is a common finding in clinical practice that is often either under- or over-investigated. It has often been stated that no matter how trivial the bleeding may seem, a complete urological investigation into its cause is mandatory. In-depth urological investigations, however, are not indicated for those patients with a glomerular lesion, and non-invasive methods that could assist in the differentiation of lower urinary tract from upper urinary tract bleeding are therefore important screening investigations. Although the presence of dysmorphic red blood cells is supposed to indicate an upper urinary tract bleed, this is not always the case. Goldwasser *et al.*[1] reported that urinary red cell size is useful in differentiating patients with glomerular from those with non-glomerular lesions.

Red cells from 100 patients with more than 10 red blood cells per high-power field of a centrifuged sample of urine were examined for the presence of dysmorphia microscopically and with a Coulter counter for red cell mean corpuscular volume (MCV) as described by Goldwasser *et al.*[1] We followed the recommendation that a red cell MCV greater than 72 fl be considered glomerular in origin. The records of all patients were traced to determine the referring doctor. Fourteen patients had red cell MCVs of less than 72 fl. All 14 were examined by nephrologists or internists, in contrast to 86 patients with red cell MCVs greater than 72 fl, who were examined by urologists, gynaecologists or general practitioners. The results also showed that there was good correlation between the red cell MCV and red cell morphology in all but 4 patients.

The results of this small comparative study indicate that red cell MCV measurement may be a simple alternative method to differentiate glomerular from non-glomerular bleeding, which may subsequently avoid unnecessary and costly invasive investigations.

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1. Goldwasser P, Antignani A, Mittman N, Rao Y, Mushnick FA, Norbergs A, *et al.* Urinary red cell size: diagnostic value and determinants. *Am J Nephrol* 1990; **10:** 148-156.

Causes of perinatal death

To the Editor: Professor Dommisse[1] provides a clear picture of the perinatal deaths occurring in the Peninsula Maternal and Neonatal Service. He also states that 'an improvement would be to assess possible avoidable factors in each case, whether these were due to suboptimal management or correctable environmental causes'.

During the 5 months May - September 1991 the hospital perinatal mortality rate at a rural Zululand hospital was 40/1 000 births. Nine of the 43 perinatal deaths were associated with suboptimal care. Identification of avoidable factors has led to the implementation of various intervention strategies aimed at eliminating avoidable deaths.

These figures support those previously published[2] and reaffirm the value of perinatal mortality audit based on critical incident analysis as well as on pathological analysis.

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1. Dommisse J. The causes of perinatal death in the Greater Cape Town area. *S Afr Med J* 1991; **80:** 270-275.
2. Wilkinson D. Perinatal mortality — an intervention study. *S Afr Med J* 1991; **79:** 552-553.

To the Editor: The Division of Neonatology at Baragwanath Hospital has been prospectively collecting perinatal data for this hospital and its satellite clinics for a number of years. The data presented by Professor Dommisse,[1] and especially the categorisation of 'neonatal causes of perinatal death' used, are therefore of considerable interest to us.

We believe that to diagnose 'immaturity' as a cause of death only 'where no other cause [is] identified' is inappropriate. For example, in the common situation where both respiratory distress (severe hyaline membrane disease) and birth trauma/haemorrhage (a large intraventricular/intracerebral haemorrhage) coexist at the time of death it may not be possible to label either as the cause of death, separate from the underlying prematurity. Similarly, deaths due to respiratory distress 'excluding causes associated with congenital abnormality, trauma, bleeding, infection and perinatal hypoxia' (Table IV, p. 272) are almost entirely due to hyaline membrane disease or its sequelae, i.e. prematurity is the basic disorder.

We have adopted the recommendations of the Conference on Priorities in Perinatal Care in South Africa, held by the Department of Paediatrics at the University of the Witwatersrand in 1982, for our database, which categorises neonatal deaths into the following: (*i*) asphyxia; (*ii*) prematurity; (*iii*) infections; (*iv*) congenital abnormalities; and (*v*) other (including metabolic, unexplained/unknown, etc.). This classification avoids the hazards of trying to ascribe an exact cause of death in a neonate where, more often than not, multiple problems were present. It also has the considerable advantage of making comparisons between centres simpler.

We have recently compared perinatal data for Baragwanath Hospital (including satellite clinics) and Johannesburg Hospital for 1989.[2] The relative causes of neonatal deaths for the two hospitals are shown in Fig. 1. Not surprisingly, asphyxia is a major, and we believe preventable, cause of perinatal loss at Baragwanath Hospital. Infections, congenital and acquired, are also overrepresented at this hospital.

Perinatal statistics for the two centres are summarised in Table I. These figures reflect the enormous discrepancies in perinatal outcome that exist in South Africa. The finding that perinatal hypoxia is responsible for 25% and 23% of neonatal deaths at Baragwanath Hospital and the Peninsula Maternal and Neonatal Service (Table X, p. 274) respectively is striking in comparison with the figure of 6% for the Johannesburg Hospital.