LETTERS TO THE EDITOR

Antenatally diagnosed renal pelvis dilatation

EDITOR,—We were interested in the findings of Jaswon *et al* regarding the outcome of babies with antenatally detected renal pelvis dilatation (ARPD).[1] Since October 1997 it has been the practice in our unit to perform micturating cysto-urethography (MCUG) on all babies with ARPD, defined as a fetal antero-posterior renal pelvis diameter of greater than 5 mm,[2] even in the presence of a normal six week postnatal ultrasound scan of the renal tract.[3]

Over the 16 months since this practice has been established, we identified 29 fetuses with ARPD from 3397 total deliveries (0.9%). Twenty four of 29 (83%) had ARPD of 5–10 mm, and five of 29 had ARPD of greater than 10 mm. Fifty five per cent were boys, 34% girls, and the sex was not identified in three fetuses who were lost to follow up. Postnatal follow up data were available for 18 of 29 babies. Postnatal abnormalities were detected in 13 of 18 (72%) of the babies. Six of 13 (46%) had vesico–ureteric reflux (VUR). Other diagnoses were mild unilateral pelviureteric junction obstruction (n=2), posterior urethral valves (n=1), duplex kidney with obstructed upper moiety requiring heminephrectomy (n=1), bladder diverticulum without ureteric obstruction (n=1), and idiopathic hydronephrosis (n=2).

Of the six babies with VUR, four had ARPD of 5–10 mm, and two had ARPD greater than 10 mm. One baby had normal postnatal ultrasound scans (performed at 3 days, and at 6 weeks of age) with bilateral grade II VUR on MCUG. One baby with reflux had focal uptake defects on dimercaptosuccinic acid scan despite treatment with antibiotic prophylaxis from birth, and the absence of history of urinary tract infection, suggesting renal dysplasia.

To further investigate the ability of antenatal ultrasonography to detect clinically significant postnatal pathology of the renal tract, we examined retrospectively the antenatal scans of all children presenting with urinary tract infection under the age of 2 years over 12 months. Antenatal scans on these children had been performed after the introduction of our current guideline for the management of ARPD. Twenty two children (12 boys; mean age 0.5 years, range 0.06–1.16 years) presented with urinary tract infection during the study period. Fourteen babies (64%) had an underlying abnormality of the renal tract; 11 had VUR (eight isolated, one with bilateral duplex kidneys, one with bladder diverticulum). Other diagnoses were isolated bladder diverticulum (n=1), gross unilateral hydro ureter and hydronephrosis, possible vesicoureteric junction obstruction (n=1), and idiopathic bilateral hydro ureter (n=1).

Of the 14 babies with renal tract pathology, nine had normal antenatal ultrasonography at 20 weeks' gestation, and in the remaining five data on antenatal ultrasonography were missing.

In conclusion, our data support the proposal by Jaswon *et al* that all babies with ARPD of greater than 5 mm should be investigated by MCUG regardless of a normal postnatal ultrasound scan of the renal tract. Even with this strategy, however, our results suggest that not all cases of clinically significant postnatal renal pathology are identified, and a significant proportion of infants and toddlers presenting with urinary tract infection have underlying renal tract pathology despite normal antenatal ultrasonography.

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How phototherapy affects the relation between serum bilirubin and plasma malondialdehyde in neonates

EDITOR,—The study by Yigit *et al*[1] showed that serum malondialdehyde (MDA) concentrations were higher in infants with hyperbilirubinaemia than in controls, but there was no significant correlation between serum MDA and bilirubin concentrations in jaundiced neonates without haemolysis.

The results of our study confirmed those of Yigit *et al*, but we also investigated whether treating neonates with phototherapy increases the risk of oxygen free radical injury. We evaluated plasma MDA which is an index of free radical induced lipid peroxidation, and serum bilirubin concentrations, in blood samples taken from healthy, term neonates with non-haemolytic hyperbilirubinaemia (n=19, total bilirubin > 15.0 mg/dl) before and after phototherapy. These were compared with those taken from healthy neonates without hyperbilirubinaemia (n=22, total bilirubin < 10.0 mg/dl). The mean birthweight, gestational age, and postnatal age did not differ between the study and control groups ($p > 0.05$). All babies were fed their mothers' milk. MDA concentrations were determined using the modified method of Stocks and Dormandy[2] with the thiobarbituric acid (TBA) test.

Plasma MDA concentrations in neonates with jaundice (0.99 (SEM 0.15) nmol/ml) were significantly higher than those of the healthy infants (0.89 (0.16) nmol/ml) ($p=0.038$). There was a significant difference between the MDA concentrations of the study group before and after phototherapy (0.99 (0.15) *vs* 0.85 (0.20) nmol/ml; $p=0.0016$). However, no significant correlation was found between plasma MDA and serum bilirubin concentrations before and after phototherapy ($r=0.16$, $p > 0.05$; $r=0.09$, $p > 0.05$).

Bilirubin is an important free radical scavenger in early neonatal life in response to oxidative stress. Phototherapy reduces the concentrations of circulating bilirubin, but there are conflicting data on red cell membrane lipid peroxidation secondary to phototherapy.[3 4] Our data suggest that phototherapy does not induce lipid peroxidation in healthy term infants with non-haemolytic hyperbilirubinemia.

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Bilirubin and lipid peroxidation

EDITOR,—I read the interesting article by Yigit *et al* about the lipid peroxidation in the first 10 days of life.[1] A few points need explanation. Table 1 showed the range for collecting control group samples as 2–10 days, which contradicts the statement of the authors that samples were drawn on the day of admission.

Secondly, the mode of delivery was not mentioned. Rogers *et al* have reported higher levels of malondialdehyde (MDA) in cord blood after labour as compared with caesarean section,[2] so the higher levels in the study group might have been because they were delivered vaginally.

Thirdly, the range for MDA in study and control groups was 2.5–22.5 µmol/l and 3.8–10.5 µmol/l, respectively. What is the normal range?

Finally, if there is a positive correlation between MDA and bilirubin, why did none of the neonates in the control group have any evidence of clinical jaundice?

With all these queries, I think the validity of the study becomes unreliable and the conclusions questionable.

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Dr Yigit responds:

I wish to make the following points in response to Dr Manzar:

1 With reference to the perceived contradiction concerning age at sample collection, samples were drawn on the day of admission to our hospital as most babies were born outside and later transferred in.
2 We are aware of the effect of the mode of delivery. In another paper we studied malondialdehyde (MDA) variations in preterm babies.[1] MDA levels were measured at one hour, 24 hours, 48 hours, and seven days. Mode of delivery only gave rise to statistically different variation at one and 24

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hours; beyond that period there was no significant effect of delivery route on MDA levels. In our study published in this journal we again found no significant difference in MDA levels according to mode of delivery.[2]

3 We are not sure what Dr Manzar means by "the normal range". Our control group gives the norm for this population under this condition. Only a large scale study would determine more precisely the normal range of MDA in infants up to 10 days old.

4 His final query reflects the fact that Dr Manzar has missed a key point about MDA and bilirubin. All human beings, not just neonates, have a detectable level of MDA. Our study is the first to show that MDA levels are higher in babies with hyperbilirubinaemia than in normal infants.

Furthermore, we investigated the difference between babies with and without haemolytic jaundice. Only those with haemolytic jaundice showed a positive correlation between MDA and bilirubin levels. This difference is clearly illustrated in the figures in our paper, as well as explained in the third paragraph of the results section.

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Pulmonary hypoplasia: alternative pathogenesis and antenatal therapy in diaphragmatic hernia

EDITOR,—We wish to comment on some aspects of the important problem raised by Porter *et al*,[1] relating to congenital diaphragmatic hernia (CDH).

Pulmonary hypoplasia in CDH may *not* be attributable to the diaphragmatic defect and visceral herniation alone. There is evidence from CDH models to indicate that, before the established hernia, lung development is abnormal from the outset in the embryonic period.[2 3] This has substantial implications for the type and timing of potential treatments.

Intrauterine tracheal occlusion for CDH is the subject of a US National Institutes of Health clinical trial (Harrison MR, personal communication). Numerous studies in experimental CDH have shown that although antenatal glucocorticoid treatment does not correct overall lung size, it improves structural, biochemical, molecular and functional abnormalities in the hypoplastic lung. As a potential pharmacological fetal treatment, antenatal steroids are therefore also under evaluation as part of an international human CDH trial (CDH Study Group, personal communication).[4]

Finally, the role of growth factors in increasing lung development remains unclear. Unravelling the control of normal pulmonary development is crucial to the design of effective medical treatments for this frustrating human disease.[5]

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Visiting policies in neonatal intensive care units: staff and parents' views

EDITOR,—Findings from a study carried out in Italy as part of an international project on parental visiting[1] may provide additional information in response to the points raised by Dr Harvey in his thoughtful commentary to our recent paper.[2] Three third level neonatal intensive care units (NICUs) with an open (that is 24 hours a day) policy towards parental visiting were compared with two units restricting visiting to specified hours ("restricted" policy). Sixty doctors, 106 nurses, and parents of 80 consecutively admitted very low birthweight babies were interviewed.

The staff views are strikingly consistent with their unit policy (table 1), with doctors and nurses in units that restrict parental visiting being less convinced about its value, and more fearful of interference with everyday routines.

Most mothers would like to be able to visit more; however, only in the two restricted policy units are hospital regulations felt to be the major limiting factor.

The over threefold higher proportion of babies fed with maternal milk at four weeks in the open policy NICUs cannot be accounted for by a number of potential confounding variables, either related to the baby or to the mother.[3]

Patterns of counselling appear not so much linked with unit policies, as with parental role. A total of 42% of fathers received the first communication about their baby's condition within one hour from delivery, and 10% later than 24 hours. The corresponding figures for mothers are 21% and 25% respectively, with no difference between inborn and outborn babies. Over 90% of fathers were directly informed by a doctor, whereas 41% of mothers were informed by their partner. In accompanying comments, many women expressed discomfort, and asked for earlier, first hand communication from the doctor in charge of their baby.

Almost a decade divides this study from the EURONIC survey,[1] but the high proportion of NICUs still restricting parental visiting in some countries shows that these findings are still relevant. As Dr Harvey rightly points out, education of staff and parents is needed to stimulate change.

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Table 1 Staff and parental views on NICU visiting policies

	Open policy No (%)	*Restricted policy No (%)*	*p Value*
Staff views			
Parental visiting should be:			
Unlimited	94 (89.5)	8 (13.3)	***
Restricted to certain hours	11 (10.5)	52 (86.7)	
Not allowed	0	0	
Parental visiting:			
Is beneficial to infants' health	78 (74.3)	29 (48.3)	***
Can shorten hospital stay	73 (70.2)	29 (48.3)	**
Interferes with unit's routines	20 (19.6)	37 (63.8)	***
Valuable for parents but stressful for staff	41 (39.8)	40 (66.7)	**
Useful for staff	66 (62.9)	22 (38.6)	**
Mothers' experience			
Frequency of visiting:			
Every day	39 (81.3)	25 (78.1)	NS
Average time spent with baby per visit (min) (median (range))	110 (30–360)	42 (10–90)	
No (%) who would like to visit more	41 (85.4)	29 (90.6)	NS
Reasons for not visiting more:			
Not allowed	0	18 (62.1)	***
Distance/costs	16 (38.1)	7 (24.1)	
Family/health	19 (45.2)	5 (16.1)	
Breast feeding at four weeks	28 (58.3)	5 (16.1)	***

*p<0.05; **p<0.01; ***p<0.001.

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