Correspondence

Archives of Disease in Childhood, 1974, **49**, 79.

Rates of creatinine and urea clearance in preterm infants on the 3rd day after birth

Sir,

In a recent paper published in the *Archives* (Sertel and Scopes, 1973), we reported the results of creatinine clearances in normal term infants. I have now studied rates of creatinine clearance in male preterm infants on the 3rd day of life. In the same infants the rates of urea clearance were measured.

There were 11 male preterm infants studied on the 3rd day of life. Gestational age varied from 32 to 35 weeks, birthweight from 2.0 kg to 2.62 kg. All infants were bottle fed using a cow's milk formula (120 ml/kg per day). The procedure for collection of urine and capillary blood and for the determination of plasma and urine creatinine was the same as described in the previous paper. Plasma urea concentration was measured by the Barthelot reaction (Fawcett and Scott, 1960), and urine urea concentration by autoanalyser (Marsh, Fingerhut, and Kirsch, 1957). The summarized findings are presented in the Table. The creatinine clearance ranged from 10.6 to 23.1 ml/min per 1.73 m², with a mean of 16.4 ml/min per 1.73 m². The urea clearances ranged from 4.5 to 22.5 ml/min per 1.73 m², with a mean of 11.4 ml/min per 1.73 m². No correlation was found between gestational age and the creatinine or urea clearances in this study.

Comparing the results with the rates of creatinine clearance of term infants found in our previous study, it appears that those of preterm infants are consistently lower. Plasma creatinine concentration in preterm infants measured on the 3rd day of life is lower than the level seen in term infants on day 1, but higher than that

of term infants on day 6. Preterm infants have lower urinary creatinine concentrations than term infants on either day 1 or day 6.

The values for urea clearance and plasma urea concentration on preterm infants are slightly lower than those of Dean and McCance (1947) in their study on term infants with meningomyelocele. They are also slightly lower than the values obtained by Gordon, Harrison, and McNamara (1942), but the infants in the latter series were all over one week of age. However, no distinction was made between small-for-dates and preterm infants in this latter study. The same criticism can be levelled against the 6 premature infants studied by Barnett *et al.* (1948).

Thus the rates of creatinine and urea clearance in 11 normal preterm infants of less than 1 week of age were found to be even lower than those of normal term infants. The implications of these very low levels of rates of clearance are discussed in the previous paper.

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TABLE
Urea and creatinine clearance in preterm male infants on the 3rd day of life

	Gestational age (wk)	Birthweight (kg)	Test weight (kg)	Urine volume (ml)	Urine collection time (min)	Urine flow rate (ml/min)	Urine creatinine (mg/100 ml)
Mean	34.2	2.31	2.28	23.6	201.9	0.140	15.6
Range	32-35	2.10-2.62	1.95-2.44	8-33	125-270	0.064-0.190	8.4-24.1

	Urine urea (mg/100 ml)	Plasma creatinine (mg/100 ml)	Plasma urea (mg/100 ml)	Creatinine clearance (ml/min per 1.73 m ²)	Urea clearance (ml/min per 1.73 m ²)
Mean	307	1.09	33.6	16.4	11.4
Range	180-550	0.75-1.4	20-52	10.6-23.1	4.5-22.6

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Solubilization

Sir,

Solubilization might be a useful new word if used to mean the process of making soluble or more soluble. Glasgow, Hamilton, and Sass-Kortsak (1973) do not define the term but use it as though they mean solubility or possibly sometimes solution. How did they measure '% lipid solubilized' (Fig. 2)? Will the authors kindly say what they mean?

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REFERENCE

Glasgow, J. F. T., Hamilton, J. R., and Sass-Kortsak, A. (1973). Fat absorption in congenital obstructive liver disease. *Archives of Disease in Childhood*, **48**, 601.

We showed Dr. Evans's letter to Dr. Glasgow, who replied:

We are grateful to Dr. P. R. Evans for the opportunity of clarifying our use of the term 'solubilization'.

Much of the fat resulting from the hydrolysis of dietary lipid is itself insoluble in water. Bile salts form micelles with these insoluble lipids thereby rendering them water soluble. It is this *process* of rendering insoluble hydrolysed fat soluble in water which we have termed 'solubilization of lipid'.

In our studies small bowel contents aspirated after a fatty meal were separated by means of ultracentrifugation into a supernatant (lipid) phase and a clear infranatant (aqueous) phase. The fat in the aqueous phase represents the fat which has been rendered soluble in water, i.e. solubilized.

In our article, 'Fat absorption in congenital obstructive liver disease', we compared the concentration of fat in the aqueous phase (solubilized fat) with that in the aspirated juice as a whole (i.e. total lipid) and used this as an indication of the degree to which lipid had been solubilized. The '% lipid solubilized' is therefore the concentration of fat in the aqueous phase compared to that in the juice as a whole related to 100.

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Fingerprints in childhood coeliac disease

Sir,

The association of fingerprint ridge atrophy with intestinal villous atrophy in coeliac patients was first reported by David, Ajdukiewicz, and Read in 1970; according to these authors, changes in fingerprints were found in most of adult coeliac patients and in the few untreated children they studied. Others have questioned these findings both in adults, and more particularly, in children (McCrae *et al.*, 1971; Mylotte *et al.*, 1972).

13 coeliac children with ages ranging from 2 to 16 years were submitted to intestinal biopsy. These children were divided into two groups, according to whether previously diagnosed (Group I, 9 children) or newly diagnosed (Group II, 4 children) as coeliacs. In Group I, 6 children were on an unrestricted diet and the biopsy in all except one showed subtotal villous atrophy, the only exception showing a partial villous atrophy. 1 child was on a low gluten but not strictly gluten-free diet and had a partial villous atrophy. 2 other children were on a strict gluten-free diet and had normal intestinal mucosa. In Group II, all 4 children had a flat mucosa with subtotal villous atrophy.

Fingerprints were obtained in each patient from the thumb, middle, and little fingers of the right hand. For each print in a coeliac child prints were obtained from 2 control children of the same age. Particular care was put in taking the print of the little finger, the most frequently affected in coeliac patients according to David *et al.* (1970). In taking the prints, the fingertips were first cleaned with ether, blotted with a lead pencil, and the print obtained on transparent sellotape which in turn was stuck on a white cardboard.

Normal fingerprints were obtained from all coeliac children, which is in agreement with the findings of McCrae *et al.* (1971), Mylotte *et al.* (1972), and David, Ajdukiewicz, and Read (1973).

We conclude that fingerprinting is of no diagnostic value in childhood coeliac disease.

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