(a)

(a)

Fig. Comparison of skeletal maturity assessments by two different systems. (a) Boys, (b) girls.

terms of the Tanner system (TW2). The results are shown in the Fig. for boys and girls, and shows the significant differences which may be obtained, the American standards always being advanced compared with the British.

Clearly, the technique chosen in estimating bone age can greatly alter its value in diagnosis. It is not suggested

that the figures shown should be used as a short cut to the more accurate assessment by the method of Tanner *et al.*, for this, as already indicated, takes into consideration overall variations in the rate of development of individual bones and so avoids the approximations of the system of Pyle *et al.*

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Folic acid levels in erythroblastotic infants

Sir,

May I clarify the reference to our studies of erythroblastotic infants in one of the recent excellent papers by Drs. Gandy and Jacobson? It is stated that we found low whole-blood folate levels in some erythroblastotic infants and that 2 who were severely anaemic showed a haematological response to daily intramuscular folic acid of 0.12–0.48 mg (Gandy and Jacobson, 1977). It might be of interest to give haematological details of the 2 erythroblastotic infants who showed a rise in reticulocytes and haemoglobin on intramuscular folic acid (Strelling *et al.*, 1966; Strelling, 1973).

The findings were as follows.

(1) 11 infants were examined who were moderately or severely affected by Rh isoimmunization and required between 1 and 6 exchange transfusions. Between the 3rd and 10th weeks their mean lowest haemoglobin was 7.8 g/dl (range 5.9–9.5 g/dl) and the mean lowest red cell folate in 9 infants not receiving folic acid was 170 μ g/l (range 57–333 μ g/l). As we reported, buffy coat smears of peripheral blood showed no signs of folate deficiency, but the red cell folate in 4 infants was below the range found in healthy controls of this age (range 110–655 μ g/l, mean 261 μ g/l).

(2) The 2 erythroblastotic infants who showed a haematological response after folic acid were treated as follows. (i) Infant J. H. Birthweight 2.36 kg, gestation 34 weeks. One exchange transfusion. On day 40 Hb was 6.7 g/dl, reticulocytes 1% and red cell folate 100 μ g/l. Intramuscular folic acid 5 mg daily was given for 3 days and after a week for a further 5 days. On day 8 the reticulocytes had risen to 14%, and after an initial fall to 5.9 g/dl Hb rose to 8.2 g/dl on day 15 and to 10.8 g/dl on day 28. (ii) Infant S. W. Birthweight 2.3 kg, gestation

35 weeks. Two exchange transfusions. On day 25 Hb was 7.4 g/dl, reticulocytes <1%. Intramuscular folic acid 0.48 mg daily was given for 3 days followed by 0.96 mg daily for a further 3 days. Red cell folate on day 4 of treatment was 170 µg/l. Reticulocytes rose to 6% and 10% on days 4 and 12 of treatment. Hb fell initially to 6.5 g/dl but on day 19 was 8.8 g/dl.

Thus while neither infant showed haematological evidence of folate deficiency, transfusion was averted by reactivation of haemopoiesis occurring directly after folic acid therapy.

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Estimation of glomerular filtration rate from plasma creatinine concentration in children of various ages

Sir,

Recent studies showed that measurement of plasma creatinine concentration (P_c) provides an accurate and simple method of estimating glomerular filtration rate (GFR) in children, provided that height is taken into consideration. Counahan *et al.* (1976) found that the

results obtained by the formula $0.43 \text{ height (cm) per } P_c$ (mg/100 ml) were as good as the 24-hour creatinine clearance values in children who were 2 months to 14 years of age.

We examined the variation with age of GFR in 21 infants aged 1–11 months and in 107 children 1–14 years of age. All of them were free of renal disease, and were hospitalized mostly for acute respiratory tract infections. Urine was collected for 24 hours and endogenous creatinine clearance was calculated according to the classical formula UV/P and the results were corrected to 1.73 m^2 body surface. These values were compared to those estimated according to the $0.43 \text{ height}/P_c$ formula. Plasma and urine creatinine concentrations were determined by the traditional method of Popper *et al.* (1937), i.e. we did not measure true creatinine levels.

As shown in the Table, the mean values of GFR obtained by the two different methods were of the same magnitude. The high standard deviation values represent a large error of estimation with both methods, but the variation was a bit smaller in the case of height/ P_c calculation. The latter proved to be unreliable in infants. As also shown by the very low correlation coefficient, the estimated GFR values were very scattered under the age of one year, and in spite of the difficulties of urine collection, the 24-hour clearance proved to be more reliable in this age group.

Our data confirm the utility of GFR estimation made from a single measurement of P_c and of body length. This seems to be a rapid and simple method in children over one year of age, even if no true creatinine concentration is determined, as in many laboratories. At the same time the method is probably of no special help in infancy. The reason for this is not quite clear, but the greater variation in the relation of length to body surface must contribute to it.

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Table Comparison of 24-hour clearance and estimated height per plasma creatinine values (mean $\pm$ SD)

Age (years)	n	24-hour creatinine clearance (ml/min/1.73m ²)	0.43 Height per P_c	Mean difference P	Correlation r
0–1	21	72 $\pm$ 31	51 $\pm$ 40	<0.02	0.146
1	6	45 $\pm$ 11	55 $\pm$ 17	NS	0.610
2	5	55 $\pm$ 41	46 $\pm$ 10	NS	0.338
3	7	60 $\pm$ 22	60 $\pm$ 21	NS	0.660
4	18	71 $\pm$ 35	75 $\pm$ 30	NS	0.502
5	13	73 $\pm$ 44	73 $\pm$ 35	NS	0.411
6	5	64 $\pm$ 33	65 $\pm$ 30	NS	0.299
7	10	67 $\pm$ 33	76 $\pm$ 34	NS	0.519
8	9	72 $\pm$ 40	89 $\pm$ 25	NS	0.276
9	12	83 $\pm$ 21	82 $\pm$ 38	NS	0.545
10	8	79 $\pm$ 21	68 $\pm$ 20	NS	0.653
11	4	92 $\pm$ 47	76 $\pm$ 24	NS	0.171
12	5	109 $\pm$ 38	100 $\pm$ 38	NS	0.290
13–14	5	86 $\pm$ 42	104 $\pm$ 31	NS	0.188
Total					
1–14 years	107	74 $\pm$ 34	85 $\pm$ 28	<0.02	0.471 P < 0.001