Confirmation of gestational age by external physical characteristics (total maturity score)

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SUMMARY The use of the total maturity score (TMS) as a means of estimating gestational age was assessed in a population of 76 low birthweight infants (≤ 2500 g) and 80 matched controls (>2500 g) all of certain gestational ages. The gestational ages, derived from the last menstrual period and from the TMS, were similar except in preterm low birthweight infants. The discrepancy in this group was attributed to the structure of the scoring system. It is concluded that the TMS is a convenient and accurate method of assessing gestational age in term babies.

Considerable research has recently been devoted to evolving methods of corroborating gestational age as calculated from the date of the last menstrual period (LMP). These range from the use of ultrasound, x-rays, and amniotic fluid estimations during pregnancy, to biochemical and clinical procedures in the newborn. The last method can be divided into three main groups—biochemical, anthropometric, and nonanthropometric. The most widely used are external physical characteristics (Farr et al., 1966), neurological signs (Robinson, 1966), or both (Dubowitz et al., 1970).

The purpose of the study reported in this paper was to assess the use of the total maturity score (TMS) (Farr et al., 1966) in a total low birthweight (LBW) population as a means of estimating gestational age as derived from the date of the LMP. Particular attention was paid to its accuracy in preterm LBW infants.

Method

The infants studied were a sample from a larger survey of low birthweight babies (Cater, 1978) and comprised LBW infants ≤ 2500 g and their matched controls of normal birthweights (>2500 g). All were of certain gestational ages and each infant was examined by J.I.C. It was fundamental to the study that J.I.C. should not know the length of gestation as stated by the mother and that the maternal history be assessed by an obstetrician, thus ensuring an independent decision concerning the accuracy of the maternal data.

The method recommends that the baby should be examined between 12 and 36 hours of age. The mean age for examination of the controls was 22·1 ± 7·6 hours; total LBW 23·2 ± 13·1 hours; LBW 24·8 ± 17·6 hours; and term LBW 21·7 ± 7·0 hours. There was no significant difference between the mean age at examination of preterm LBW infants and controls. The preterm infants were examined at a later age because of the higher incidence of illness in them.

Results

The data are presented and analysed in broad categories of controls and total LBW, with more detailed subdivision into preterm LBW and term LBW to reveal any weakness of the method. In other studies the results have been combined and presented for a single group, thus concealing the difficulties posed by the preterm subgroup.

The gestational age was derived from both the LMP and the TMS and the difference between the two methods was compared (Table). The only significant difference was found in the preterm LBW group in which the mean gestational age derived from the LMP, 32·9 weeks SD 2·9, differed from that derived from the TMS, 34·4 weeks SD 3·0 (P <0·05), a difference of 1·5 weeks. Comparison of the mean gestational ages derived from the LMP and TMS for the other three groups showed no statistical differences. The wide SD found in the total LBW group reflects the influence of the preterm LBW group.

<table>
<thead>
<tr>
<th>Gestational age</th>
<th>Controls (n = 80)</th>
<th>Total LBW (n = 76)</th>
<th>Preterm LBW (n = 36)</th>
<th>Term LBW (n = 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Derived from LMP</td>
<td>40·1</td>
<td>1·0</td>
<td>36·1</td>
<td>3·2</td>
</tr>
<tr>
<td>Derived from TMS</td>
<td>40·4</td>
<td>1·0</td>
<td>36·6</td>
<td>3·2</td>
</tr>
</tbody>
</table>

*P < 0·05.
Dissolution of bilateral staghorn cystine renal calculi

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SUMMARY Bilateral staghorn renal calculi in a 7-year-old girl with cystinuria were dissolved over a period of 6 months, using a high fluid intake, urinary alkalisation, and D-penicillamine. Even in children with extensive cystine urolithiasis, medical management may avert the need for surgery.

Cystinuria is an inherited complex autosomal recessive defect in which there is decreased proximal renal tubular reabsorption of filtered cystine, lysine, arginine, and ornithine. Defective transport of these amino-acids in the gut has also been demonstrated, but the clinical symptoms are related only to the associated stone formation (Crawhall and Watts, 1978).