to be approximately 30,000 (from figures provided by the Medical Officers of Health in the region and extracted from the 1971 census), a very rough estimate of the incidence of CF in this region among Asians is 1:10,000. No attempt has been made to determine gene frequency, because the data are so scanty and the immigrant groups have come mainly from small, well-defined areas of India and Pakistan where consanguineous marriages are common, though not always recognized as such.

Pakistanis are Caucasian by race, as are most of the inhabitants of the Indian subcontinent. If the high incidence of CF among populations of European origin is associated with their Caucasian race, then with increased awareness of the disease further cases may be found in India and Pakistan.

Summary

Three children, 2 of them brother and sister, whose parents were natives of West Pakistan, had cystic fibrosis. The present incidence of this disease among Asian immigrants in the West Midlands is approximately 1:10,000.

We thank Professor Charlotte M. Anderson for her advice on the preparation of this paper, Dr. H. McC. Giles for permission to investigate Case 3, Medical Officers of Health in the West Midlands for statistical information, and Miss Alison M. Howell for duodenal enzyme assay in Case 3. M.C.G. is in receipt of a grant from the Cystic Fibrosis Research Trust.

Assessment of gestational age in twins

The reliability of a scoring system for the estimation of neonatal gestational age, based on 10 neurological and 11 external criteria, devised by Dubowitz, Dubowitz, and Goldberg (1970), has been confirmed by Brueton, Palit, and Prosser (1973), Jaroszewicz and Boyd (1973), and Singer, Blake, and Wolfsdorf (1973). In the original study by Dubowitz et al. (1970), 23 small-for-dates and 14 large-for-dates babies were included. The distribution of total score against gestational age of these infants seemed to fit the regression line and not to differ from that of appropriate weight-for-dates infants, though the authors did not specifically comment on this finding. In order to test the reliability of the method, this study was undertaken to estimate the gestational age of twins, with particular emphasis on pairs of twins with marked differences in birthweight.

Material and methods

Gestational age was estimated in 33 pairs of consecutive twins by the method of Dubowitz et al. All the estimations were done by one experienced examiner (A.M.J.) during the routine estimation of gestational age of newborns, as previously described (Jaroszewicz and Boyd, 1973). It was unavoidable that the examiner would sometimes know that twins were being examined. True gestational age was unknown in many of these pregnancies due to uncertainty about the date of the last menstrual period. The difference in birthweight between members of a twin pair was calculated as a percentage of the weight of the heavier twin.

Results

The results are shown in the Table where the pairs have been arranged in order of increasing birthweight differences in percent. The difference in the estimated gestational age (EGA) between the lighter and heavier of the twins varied between 0·0 and 2·0 weeks, with one exception, where the difference was 2·5 weeks (pair no. 24). The lighter twin was not necessarily the one to show a lower EGA. The mean EGA of the 33 lighter twins was 36 weeks and of the 33 heavier twins 36·4 weeks. The difference between these two means is not significant (P < 0·001). In 7 pairs (pairs no. 27 to 33) the birthweight difference was more than 20%: the mean EGA of the lighter twins in this group was 37·2 weeks, and the mean EGA of the 7 heavier twins 37·5 weeks. This difference, too, is not significant (P < 0·001).

MARY C. GOODCHILD, J. INSLEY,* D. I. RUSHTON, and H. GAZE

*Correspondence to Dr. J. Insley, Queen Elizabeth Maternity Hospital, Birmingham B15 2TG.
Short reports

**TABLE**

*Estimated gestational age (EGA) in 33 twin pairs*

<table>
<thead>
<tr>
<th>Twin pair identity no.</th>
<th>Lighter twin</th>
<th>Heavier twin</th>
<th>EGA difference</th>
<th>Birthweight difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex</td>
<td>Birthweight (g)</td>
<td>EGA (wk)</td>
<td>Sex</td>
</tr>
</tbody>
</table>
| 1                      | M   | 2640          | 38-0     | F   | 2670          | 38-0     | 0   | 30                       | 1:12
| 2                      | F   | 1842          | 32-5     | F   | 1871          | 33-0     | 0   | 29                       | 1:54
| 3                      | F   | 1647          | 33-0     | F   | 1673          | 33-0     | 0   | 26                       | 1:55
| 4                      | F   | 2240          | 35-5     | F   | 2296          | 36-0     | 0   | 56                       | 2:24
| 5                      | M   | 2353          | 38-0     | F   | 2436          | 38-0     | 0   | 85                       | 3:49
| 6                      | M   | 2296          | 38-5     | F   | 2381          | 38-5     | 0   | 85                       | 3:57
| 7                      | M   | 2523          | 38-0     | M   | 2637          | 38-0     | 0   | 114                      | 4:32
| 8                      | F   | 3006          | 38-0     | F   | 3175          | 38-5     | 0   | 169                      | 5:32
| 9                      | M   | 1928          | 34-0     | M   | 2041          | 34-0     | 0   | 113                      | 5:54
| 10                     | M   | 1814          | 34-0     | F   | 1928          | 32-0     | 2   | 114                      | 5:91
| 11                     | F   | 2550          | 36-5     | F   | 2722          | 37-0     | 5   | 172                      | 6:32
| 12                     | F   | 1977          | 36-5     | M   | 2126          | 38-0     | 1   | 154                      | 7:24
| 13                     | F   | 1701          | 35-0     | F   | 1843          | 34-5     | 0   | 142                      | 7:70
| 14                     | M   | 2495          | 36-0     | M   | 2722          | 37-0     | 1   | 227                      | 8:33
| 15                     | M   | 2722          | 38-0     | M   | 2977          | 36-5     | 1   | 255                      | 8:57
| 16                     | F   | 2722          | 38-0     | M   | 3034          | 38-5     | 0   | 312                      | 10:28
| 17                     | M   | 2948          | 36-5     | M   | 3289          | 38-5     | 2   | 341                      | 10:36
| 18                     | M   | 1332          | 32-5     | F   | 1503          | 31-5     | 1   | 171                      | 11:38
| 19                     | F   | 2041          | 33-0     | M   | 2353          | 35-0     | 2   | 312                      | 13:26
| 20                     | F   | 2580          | 38-0     | M   | 2977          | 40-0     | 2   | 397                      | 13:33
| 21                     | F   | 2320          | 35-5     | M   | 2700          | 36-5     | 1   | 380                      | 14:07
| 22                     | F   | 2722          | 37-0     | M   | 3203          | 37-5     | 0   | 401                      | 15:02
| 23                     | M   | 1162          | 31-0     | F   | 1368          | 30-5     | 0   | 206                      | 15:06
| 24                     | F   | 2098          | 35-5     | F   | 2552          | 38-0     | 2   | 454                      | 17:79
| 25                     | F   | 1899          | 38-5     | M   | 2353          | 38-5     | 0   | 454                      | 19:29
| 26                     | M   | 1588          | 36-0     | F   | 1981          | 38-0     | 2   | 393                      | 19:84
| 27                     | F   | 1758          | 37-5     | M   | 2221          | 36-5     | 1   | 463                      | 20:85
| 28                     | M   | 2665          | 36-0     | M   | 3430          | 36-5     | 0   | 765                      | 22:30
| 29                     | F   | 2381          | 37-0     | M   | 3147          | 36-5     | 1   | 766                      | 24:35
| 30                     | M   | 2297          | 39-5     | M   | 3232          | 40-5     | 1   | 935                      | 28:93
| 31                     | F   | 2084          | 36-0     | M   | 2977          | 37-0     | 1   | 893                      | 29:99
| 32                     | F   | 1531          | 33-0     | M   | 2324          | 34-0     | 1   | 793                      | 34:12
| 33                     | F   | 1549          | 34-5     | F   | 2695          | 33-0     | 1   | 1146                     | 42:52
Mean EGA | 36-0 | 36-4 |

**Discussion**

Many of the mothers in this study were uncertain about the dates of their last menstrual periods, so it was not possible to determine the true gestational age of the babies. If it is assumed, however, that the weight of the heavier infants is appropriate for gestational age, these bigger infants can be considered the perfect controls for the lighter infants, who are of the same gestational age but smaller in size; and in the twin pairs with marked weight differences between the two members of a pair the lighter one must then be considered small-for-dates. Despite this, there was no significant difference between the mean EGA of the lighter and heavier twins, even in the group where the birthweight difference between two members of a twin pair exceeds 20%. The method used for estimating gestational age can therefore be considered reliable.

**Summary**

Gestational age was estimated by the method of Dubowitz et al. (1970) in 33 pairs of twins. In spite of marked differences of up to 20% in birthweight between the two members of a twin pair, the mean estimated gestational age of the heavier twins did not differ significantly from the mean estimated gestational age of the lighter twins.

**REFERENCES**


M. P. Keet,* A. M. Jaroszewicz, and A. Le R. Liebenberg

Department of Paediatrics, Tygerberg Hospital, Cape Town, South Africa.

*Correspondence to Dr. M. P. Keet, P.O. Box 63, Tiervei, C.P., South Africa.

Downloaded from [http://adc.bmj.com/](http://adc.bmj.com/) on June 22, 2017 - Published by group.bmj.com
Assessment of gestational age in twins.

M P Keet, A M Jaroszewicz and A R Liebenberg

Arch Dis Child 1974 49: 741-742
doi: 10.1136/adc.49.9.741

Updated information and services can be found at:
http://adc.bmj.com/content/49/9/741.citation

These include:

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/