Waardenburg’s syndrome has been described in many populations throughout the world. However, the peculiar association of features suggestive of WS with total intestinal aganglionosis and ileal atresia and bands, manifesting in the neonatal period, with an autosomal recessive mode of inheritance, seems peculiar to the population of the Indian subcontinent.

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Current trends in the prevalence at birth of neural tube defects in Singapore

Sir,

A decline in the prevalence at birth of neural tube defects (NTD) has been reported in most western countries. The reasons for the decline are unknown as the aetiology of NTD is still not well understood. Increased public health awareness, more demand for genetic counselling, improved maternal environment, better prenatal care, and early detection and termination of pregnancy have been suggested to be responsible for the reduction of the prevalence at birth of NTD. On the other hand, some authors in the United Kingdom do not agree that prenatal screening and increase in the number of terminations of pregnancy are the main factors behind the recent decline. Furthermore, in the United States the decline started well before 1970 when screening was not widely available.

A retrospective study of NTD was conducted in our hospital to see if there was a change in the prevalence at birth of NTD in the last 12 years (1976 to 1987). In this period, as a general practice in this hospital, only mothers who had had an infant with
TABLE Prevalence at birth of neural tube defects at Toa Payoh Hospital.

<table>
<thead>
<tr>
<th>Year</th>
<th>No of deliveries</th>
<th>No of Anencephaly</th>
<th>No Rate</th>
<th>No Spina bifida</th>
<th>No Rate</th>
<th>No Encephalocele</th>
<th>No Rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-78</td>
<td>16 203</td>
<td>12</td>
<td>0.74</td>
<td>5</td>
<td>0.31</td>
<td>3</td>
<td>0.19</td>
<td>20</td>
</tr>
<tr>
<td>1979-81</td>
<td>16 702</td>
<td>8</td>
<td>0.48</td>
<td>9</td>
<td>0.54</td>
<td>2</td>
<td>0.12</td>
<td>19</td>
</tr>
<tr>
<td>1982-84</td>
<td>14 186</td>
<td>12</td>
<td>0.85</td>
<td>6</td>
<td>0.42</td>
<td>2</td>
<td>0.14</td>
<td>20</td>
</tr>
<tr>
<td>1985-87</td>
<td>10 723</td>
<td>16</td>
<td>1.49</td>
<td>4</td>
<td>0.37</td>
<td>3</td>
<td>0.28</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>57 814</td>
<td>48</td>
<td>0.89</td>
<td>24</td>
<td>0.41</td>
<td>10</td>
<td>0.18</td>
<td>82</td>
</tr>
</tbody>
</table>

χ² (3 df) = 8.301
p = 0.02 < p < 0.05

Over the 12 year period, 82 cases of NTD were identified among 57,814 deliveries. The annual prevalence at birth of all NTD ranged from 0.54 to 2.5 per 1000 deliveries, with an overall prevalence at birth of 1.49 (SD 0.56) per 1000 deliveries. Anencephaly, spina bifida, and encephalocele occurred with frequencies of 0.89 (SD 0.47), 0.41 (SD 0.25), and 0.18 (SD 0.14) respectively per 1000 deliveries (table). Despite the small numbers there is a significant variation in the prevalence of anencephaly, which trebled between 1979 and 1981 and 1985 and 1987.

Given this increase, it is of interest that Choi and Klaponski and Crowe et al. suggested that the prevalence of NTD might be increased after therapeutic abortion or oral contraception. These have become more widespread in Singapore: a family planning programme which has been successful in controlling population growth was introduced in 1970, and the number of legalised abortions performed under the Abortion Act increased from 1913 in 1970 to 16,412 in 1980. However, oral contraception and therapeutic abortion are also widespread in western countries where the prevalence of NTD has declined.

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References