A STUDY OF TWIN BIRTHS IN JABALPUR CITY*

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Twin birth refers to the nearly simultaneous birth of two human infants by one mother (Hamilton 1959). The biological phenomenon of twinning has attracted immense interest and curiosity from early times. It has long been known that there are two different types of twins. Some are so similar to each other that they are called identical twins, others are no more similar than sibs, and they are called nonidentical or fraternal twins. Identical twins originate from a single egg fertilized by a single sperm, while nonidentical twins come from two eggs, each fertilized by a separate sperm. The occurrence of two-egg or dizygotic twins depends on the exceptional, more or less simultaneous, release of two eggs from one or both ovaries of a woman and their subsequent fertilization. One egg or monozygotic twins are the result of the division of a single egg into two independent embryonic structures. Monozygotic twins are genetically alike, since mitosis provides the cells of both with descendants of the same chromosomes originally carried by the single zygote. Dizygotic twins are no more alike genetically than two sibs derived from two separate eggs and two separate sperms which matured in the gonads of the parents at different times.

The occurrence of twinning in human species is a variation of the normal occurrence, that is, the production of one fetus at one gestation.

Material and Methods

The material for this study was collected from the maternity and child welfare centres of the Jabalpur Corporation and Lady Elgin Hospital, in Jabalpur City. The data relating to child births from 1960 to 1969 were collected and analysed. The material covered 43,652 births. The data were subjected to statistical analysis with a view to finding the frequency of twinning, and the relationship between maternal age, sex incidence, religion, average birth weight and mortality, with twin birth.

Results and Discussion

1. Frequency of twinning

There were 43,652 births during 1960 to 1969. Out of these, 384 were twin births, the frequency being 0.875 per cent. The frequency of twinning in some of the western countries is quoted as Denmark 1.5 per cent, Sweden 1.4 per cent, Scotland 1.2 per cent, France 1 per cent, Japan 0.8 per cent and U.S. 1.1 per cent. In certain countries twin births are reported to be extremely rare as in certain parts of China and Japan. In a study at Gwalior (M.P.) the incidence was found to be 0.9 per cent (Park et al. 1966).

2. Religion

Of 384 twin births, 336 (87.5 per cent) were among Hindus, 14 (3.8 per cent) among Christians and 34 (8.8 per cent) among Muslims.

3. Maternal age and twinning

The number of multiple births increases with the number of pregnancies and the age of the mother. This curious

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Table 1. Distribution of mothers according to age.

<table>
<thead>
<tr>
<th>Age of mother (years)</th>
<th>No. of mothers with twin births</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 20</td>
<td>39</td>
<td>10.15</td>
</tr>
<tr>
<td>21—30</td>
<td>230</td>
<td>59.89</td>
</tr>
<tr>
<td>31—40</td>
<td>106</td>
<td>27.60</td>
</tr>
<tr>
<td>Over 40</td>
<td>9</td>
<td>2.34</td>
</tr>
</tbody>
</table>

It will be seen from Table 1 that the majority of the mothers who gave birth to twins were in the age group of 21-30 years (59.89 per cent). The next highest incidence was found in the age group 31-40 years (27.6 per cent). In a study at Gwalior the incidence was found to be the highest in the age group of 21-30 years (62.4 per cent). The next highest incidence was in the age group 31-40 (25.5 per cent) (Park 1966). In other studies conducted at Edinburgh and Glasgow the incidence of twin births was highest amongst the 35-40-year age group. Increasing age of the mother appears to be an important factor in the occurrence of twin births but how the age factor predisposes to twinning is not clear.

4. Parity and twinning

It is quite common to find twin-births in large families (Park 1966). Statistics in a number of countries show that the frequency of twin births is higher when the number of preceding births is greater. In this study the relationship between parity and twin births is shown in Fig. 1. It was seen that the incidence