Prevalence of Congenital Birth Defects among Pediatric Patients of Interior Punjab

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ABSTRACT
Objective: To find out the prevalence of congenital birth defects among the pediatric patients of Sialkot.
Methods: A descriptive cross-sectional study was conducted at the pediatrics medicine, pediatric surgery and obstetrics ward of Khawaja Muhammad Satdar Medical College and hospital Sialkot Pregnant women irrespective of the parity were enrolled in the study. Demographic variables, detailed history and examination before and after delivery were noted on a preformed proforma. The data was entered and analyzed through Statistical Package for Social Science (SPSS) version 20. p-value less than 0.05 was considered as significant.

Results: The mean age of the pregnant mothers included in the study was 25.45 ± 5.12. The most common congenital anomaly was having age more than 30 years (58.1%) and majority were multiparous (52.4%). Cousin marriage was the most common factor leading to birth defects among their children and the result was significant (p-value ≤0.05). The prevalence of congenital birth defect was 14.7%. The cleft palate was the most common anomaly followed by hydrocephalus, cleft lip, down syndrome, polydactyly, undescended testes, club foot, microcephaly, meningomyelocle, ambiguous genitalia and bradydactyly. The prevalence of congenital birth defect was 14.7% and cleft palate was the most common anomaly followed by hydrocephalus and down syndrome. The most common associated factor was cousin marriages.

RESULTS
The mean age of the pregnant mothers included in the study was 25.45 ± 5.12 with average height and weight. The most common congenital birth defect is congenital heart disease followed by neural tube defects including down syndrome. Considering specifically Pakistan the prevalence is between 6-11% as per available literature. Children with congenital abnormality, usually die during early childhood because of malfunctioning of body mechanism. Majority of the congenital birth defects are sporadic as the underlying cause cannot be identified.

There are multiple factors, including genetic and environmental factors, that can lead to congenital anomalies. Focusing Pakistan, the genetic causes like chromosomal disorders are rare as comparing environmental factors, that accompanies 10% of total burden of disease and the most common is frequent exposure of mother to infections. Majority of middle east and Asian's prefer consanguineous marriages which is also a leading cause of congenital anomalies now a day. Cousin marriage is a very common trend in Pakistan, specially the interior areas. So the aim of current study was to find out the prevalence of congenital birth defects among the pediatric patients of Sialkot.

METHODOLOGY
A descriptive cross-sectional study was conducted at the pediatrics medicine, pediatric surgery and obstetrics ward of Khawaja Muhammad Satdar Medical College and hospital Sialkot during the period of April to September 2021. The study got ethical approval from the concerned institute. Sample size was calculated through Open Epi calculator and was 295. Pregnant women irrespective of the parity were enrolled in the study, prior to that informed consent was taken. Demographic variables, detailed history and examination before and after delivery were noted on a preformed proforma.

The data was entered and analyzed through Statistical Package for Social Science (SPSS) version 20. All the numerical variables were presented as mean with standard deviation while categorical variables as frequency and percentages. To find out the association of numerical and categorical variables with the occurrence of congenital birth defects, the t-test and chi-square was used respectively. p-value less than 0.05 was considered as significant.

Table 1: Demographic characteristics of Pregnant mothers included in the study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean ± SD</th>
<th>%</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (years)</td>
<td>25.45 ± 5.12</td>
<td>-</td>
<td>0.001</td>
</tr>
<tr>
<td>Mean years of miscarriage</td>
<td>4.49 ± 3.1</td>
<td>-</td>
<td>0.04</td>
</tr>
<tr>
<td>Mean weight (kg)</td>
<td>67.11 ± 7.45</td>
<td>-</td>
<td>0.39</td>
</tr>
<tr>
<td>Mean height (meters)</td>
<td>1.61 ± 0.38</td>
<td>-</td>
<td>0.721</td>
</tr>
<tr>
<td>Age groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥30 years</td>
<td>58.1</td>
<td>41.9</td>
<td>0.001</td>
</tr>
<tr>
<td>≥30 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparous</td>
<td>52.4</td>
<td>37.6</td>
<td>0.382</td>
</tr>
<tr>
<td>Nulliparous</td>
<td>33.2</td>
<td>66.8</td>
<td>0.382</td>
</tr>
<tr>
<td>Grandmultiparous</td>
<td>14.3</td>
<td>85.7</td>
<td></td>
</tr>
<tr>
<td>Cousin marriage</td>
<td>69.7</td>
<td>30.3</td>
<td>0.000</td>
</tr>
<tr>
<td>Normal vaginal delivery</td>
<td>48.9</td>
<td>51.1</td>
<td>0.869</td>
</tr>
</tbody>
</table>
study and found 1% rise in prevalence rate per year. Current study reported that 69.7% cases of congenital anomalies had cousin marriages in their parents. The ratio of cousin marriages is even higher in Peshawar i.e. near about 80% [17]. Our neighboring country, India has a very low ratio of cousin marriage (1-4%), just because of their religious beliefs [18,19].

The prevalence of congenital defects is varying between developed and developing countries because of the two main reasons, including cousin marriages and failure of prenatal diagnosis because of poor medical facilities to remote areas of country.

CONCLUSION

The prevalence of congenital birth defect was 14.7% and cleft palate was the most common anomaly followed by hydrocephalus and down syndrome. The most common associated factor was cousin marriages.

REFERENCE