Perinatal Mortality in Multiple Pregnancy in a Rural Area of Punjab

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What is the perinatal mortality rate in multiple pregnancy in rural Punjab?
Perinatal Mortality in Multiple Pregnancy in a Rural Area of Punjab

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ABSTRACT

Research Question:

What is the perinatal mortality rate in multiple pregnancy in rural Punjab?

Methods & Settings:

In the present study, information regarding total births or deliveries was analyzed from the records of Rural Field Practice Area of Department of Community Medicine, Dayanand Medical College Ludhiana, Punjab from the year 1991 to 2009. Perinatal mortality rate was defined as the total number of still births and early neonatal deaths per 1000 total multiple births.

Results:

There were 6536 deliveries, 65 pairs of twin births and one triplet birth during the period of the study, thus giving a twinning rate of 9.94 per 1000 total deliveries and a triplet rate of 0.15 per 1000 total deliveries. The perinatal mortality rate among multiple births was 160.3 per 1000 total multiple births and was significantly higher in the group in which diagnosis of multiple pregnancy could not be made during the antenatal period.

Key words: Perinatal mortality rate, Twinning rate, Antenatal Diagnosis of twins.
INTRODUCTION

Perinatal mortality is one of the most sensitive indices of maternal and child health (1). The high level of pregnancy wastage due to late fetal and early neonatal deaths has aroused considerable concern among health professionals as well as administrators.

Among multiple births, twin births are the commonest form. Twin pregnancy is associated with an increased risk of preterm morbidity, mortality and maternal complications, especially in developing countries. (2)

The available information regarding the extent of perinatal mortality among multiple births and associated factors is mainly from hospital data with its inherent bias (3). Community based data is essential to get a realistic picture of this problem in rural communities with inadequate health facilities. Thus the present study is an attempt to determine perinatal mortality among multiple births in rural Ludhiana, Punjab.

MATERIAL & METHODS

The present study was carried out in the rural field practice area of Department of Community Medicine, Dayanand Medical College & Hospital, Ludhiana which comprises of 15 villages in Dehlon block. Information regarding total births or deliveries during the period of 1991 to 2009 was analyzed from the records. The registration of pregnancies and their outcome is known in cent percent cases. A retrospective analysis of 65 twins and one triplet was conducted by doing house-to-house visits. One twin birth could not be studied because the family had moved to another village. Perinatal mortality rate (PMR) among multiple births was defined as the total number of still births and early neonatal deaths (within 7 days of birth) per 1000 total multiple births.

OBSERVATIONS

From the year 1991 to 2009, there were 6536 deliveries in the study population. Out of these, 6470 were singletons, 65 were twin births and one triplet birth. The twinning rate and triplet rate were calculated to be 9.94 and 0.15 per 1000 deliveries respectively. One multiple birth could not be followed as family had migrated to another village; hence further analysis was done for 65 multiple births only.

Among the 65 multiple births, diagnosis of multiple pregnancy was not made in 35 cases (53.8%) during the antenatal period of the mother and antenatal diagnosis could be made only in 30 cases (46.2%).

The perinatal mortality rate among multiple births was 160.3 per 1000 total multiple births with 21 perinatal deaths in 131 total multiple births. Further sexwise analysis of perinatal mortality showed that PMR was found to be higher (204.1 per 1000 total multiple births) among female babies. (Table I)

On further analysis, it was observed that 81% of perinatal deaths were seen in the group of pregnant females where antenatal diagnosis of the multiple pregnancy could not be established and PMR in this group was 242.8 per 1000 total multiple births (Table II). This rate was about fourfold higher than that among the group where multiple pregnancy was diagnosed during the antenatal period. (p=0.0179)
Table I: Perinatal Mortality in relation to Sex of the Child in Multiple Pregnancies

<table>
<thead>
<tr>
<th>Sex of Child</th>
<th>No. of Children</th>
<th>Perinatal Deaths</th>
<th>PMR</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>82</td>
<td>11 (52.4%)</td>
<td>134.1</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>49</td>
<td>10 (47.6%)</td>
<td>204.1</td>
<td>1.52 (0.55, 4.21)</td>
</tr>
<tr>
<td>Total</td>
<td>131</td>
<td>21</td>
<td>160.3</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 0.80$  d.f. = 1  p=0.3725

Table II: Perinatal Mortality in relation to Antenatal Diagnosis of Multiple Pregnancies

<table>
<thead>
<tr>
<th>Antenatal Diagnosis</th>
<th>No. of Children</th>
<th>Perinatal Deaths</th>
<th>PMR</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>61</td>
<td>4 (19%)</td>
<td>65.5</td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>70</td>
<td>17 (81%)</td>
<td>242.8</td>
<td>3.70 (1.09, 13.83)</td>
</tr>
<tr>
<td>Total</td>
<td>131</td>
<td>21</td>
<td>160.3</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 5.60$  d.f. = 1  p=0.0179

DISCUSSION

Incidence of twins in the present study was 9.94 per 1000 total births, which is well within the range of 10.1 per 1000 births as found in the study conducted in rural Ahmedabad, Gujarat. (4)

Perinatal mortality rate in the present study, which was found to be 160.3 per 1000 total multiple births, is comparable with that of findings of other studies i.e. 170 per 1000 total twin births (5) and 131 per 1000 total twin births (2). Similarly, others studies (6, 7) have also reported higher PMR among twin births. In a study done in the same field practice area as the present study, the PMR was found to be 34.57 per 1000 total births in general population (8). Similarly, NFHS-3 has estimated PMR for India to be 49 per 1000 total births and for Punjab to be 33.2 per 1000 total births (9). The present study highlights that the PMR in multiple pregnancy is much higher than the overall perinatal mortality rate.

Female twin babies had non-significant higher perinatal mortality than male twin babies in the present study. This could be because of sex selective feticide/infanticide as reflected by the lower female sex ratio in this part of the country, though this fact could not be studied in the present study. Diagnosis of multiple pregnancy was made in only 46.2% of pregnant women during antenatal period and PMR was found to be significantly lower in this group. Similar findings were reported by other studies (2, 10) where majority of pregnant women could not be registered during antenatal period.
CONCLUSION

This study highlights that in spite of the improvement in the obstetric services and launching of many schemes by the Government (e.g. Janani Suraksha Yojna), the perinatal mortality remains alarmingly high in multiple pregnancy. Good antenatal care and early diagnosis of multiple pregnancies can help to decrease the perinatal mortality in such cases. Care providers should be proactive in diagnosing multiple pregnancy particularly in view of the fact that with the relatively recent advent and growing popularity of assisted reproductive technology (ART) procedures, the occurrence of both dizygotic and monozygotic twins has increased (11).

REFERENCES