AIM: Records of tertiary care centers are important for the evaluation of the causes of perinatal deaths (PND) to build strategies for improving care provided to mothers and their babies. To investigate the maternal, gestational, and neonatal factors associated with PND at a tertiary care center for the years 2012 and 2013.

METHODS: Case-control study of 168 PND cases in 17843 deliveries in year 2013 were compared with 206 PND cases in 17689 deliveries in 2012. Overall Caesarean rate (C/S) was 47.14%, and 41.9% in year 2013 and 2012, respectively. Data were obtained from the Zekai Tahir Burak Women's Health Education & Research Hospital's registry of births and terminations with a gestation period of at least 20 weeks or a birth weight of at least 400 g and registries of birth defects (including cerebral palsy and terminations for defects at any gestational period). The classification of death was made according to the previously defined criteria as:

1. Congenital malformations, deformations and chromosomal abnormalities
2. Disorders related to short gestation and low birthweight, not elsewhere classified
3. Sudden infant death syndrome
4. Newborn affected by maternal complications of pregnancy
5. Newborn affected by complications of placenta, cord and membranes
6. Accidents (unintentional injuries); Respiratory distress of newborn
7. Bacterial sepsis of newborn
8. Neonatal hemorrhage
9. Necrotizing enterocolitis of newborn

Cause/conditions contributing to fetal death was analysed as:
- initiating cause/condition
- other significant causes or conditions
- weight of fetus
- estimated time of fetal death
- was an autopsy performed?
- was a histological placental examination performed?

Correlations between variables and PND were evaluated. PND-related variables were included in a multiple logistic regression model, and independent estimates of PND risk were obtained. SPSS version 22 was used for statistical analysis.

RESULTS:

- PND was 11.64‰ in year 2012 and 9.48‰ in year 2013 with a 2.16‰ reduction in tertiary hospital based study.
- Of all the deaths, there were 34 deaths in 19 twin and 3 triplet pregnancies in year 2012, whereas there were 34 deaths in 29 twin pregnancies in 2013.

The distribution of PND according to birthweight were as follows:

<table>
<thead>
<tr>
<th>Birthweight</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2500g</td>
<td>25/206(12.13%)</td>
<td>24/168(14.28%)</td>
</tr>
<tr>
<td>2499-2000g</td>
<td>14/206(6.79%)</td>
<td>18/168(10.71%)</td>
</tr>
<tr>
<td>1999-1500g</td>
<td>18/206(8.73%)</td>
<td>18/168(10.71%)</td>
</tr>
<tr>
<td>1499-1000g</td>
<td>30/206(14.56%)</td>
<td>26/168(15.47%)</td>
</tr>
<tr>
<td>&lt;999-500g</td>
<td>108/206(52.47%)</td>
<td>73/168(43.45%)</td>
</tr>
<tr>
<td>500-998g</td>
<td>12/206(5.82%)</td>
<td>9/168(5.35%)</td>
</tr>
</tbody>
</table>

Deaths under 1000 gram over contributed to PND as a ratio of 57.6% in 2012 and 82/168(48.80%) in 2013.

PND was positively associated with male sex, C/S deliveries, congenital anomaly, multiple pregnancy, prematurity, low 5-minute Apgar score and structural/chromosomal anomalies. Congenital heart defects, central nervous system abnormalities, diaphragmatic hernias are the most frequent cause of death, whereas trisomy 13 and 18 constituted the most common chromosomal abnormality. Though postmortem examinations were made, autopsy rates remained significantly low; however, placental examinations were performed for births with low Apgar scores, and cases with prematurity.

CONCLUSIONS: Preventive strategies: Prevention of multiple pregnancies, prevention of singleton preterm deliveries and an effective national screening and diagnosis programme with fetal abnormality counselling covering all aspects at both I and II trimesters appear to be important for achieving a decrease in PND, emphasizing the importance of pre-pregnancy interventions and therapies, effective antenatal screening programmes and antepartum care.