Certain Conditions Originating in the Perinatal Period and Their Correlation with Complications of Pregnancy

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ABSTRACT

Aim: The aim of this work is to study certain conditions originating in the perinatal period and their correlation with complications of pregnancy. Methods: The statistical methods were used to derive the results of this work are Student t-test in order to check the statistical significance of the conditions originating in the perinatal period in relation to gender of the child and the Pearson correlation coefficient for the relationship between these conditions and the complications of pregnancy. Results: The results showed that there is no statistically significant difference in the number of certain conditions originating in the perinatal period in relation to gender of the child while, there is a statistically significant relationship between these conditions with complications of pregnancy. Conclusions: This study has shown that there is a strong correlation between certain conditions originating in the perinatal period and complications of pregnancy. Moreover, from all these conditions of perinatal period, most deaths are observed in slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight.

Keywords: Perinatal period, complications of pregnancy, disorders related to short gestation

1. INTRODUCTION

Neonatal mortality has so far been a major public health problem in developing countries. One of the goals of the United Nations is to reduce by two-thirds the mortality rate in children under the age of five by 2015 [1]. Although mortality rates in children of this age group have fallen in recent decades, neonatal mortality rates have not changed significantly [1]. According to the WHO, the first 24 hours of newborn life are vulnerable [2,3]. Recent research shows that about half of deaths under the age of five are of perinatal origin and that neonatal mortality represents two-thirds of child mortality [4,5]. Lack of prenatal care has been shown to negatively affect the effects of pregnancy and is associated with increased perinatal death rates [6,7,8]. This work studies the conditions originating in the perinatal period diseases of the human nervous system related to the gender and age of occurrence in Cyprus, their mortality rates and their relation to atmospheric pollution.
2. METHODS

The data used in this work come from the Republic of Cyprus and cover the period 2015. Cyprus is a small island in the Mediterranean and has been a member of the European Union since 2004, with a population of approximately 838,897 inhabitants. The statistical methods used to extract the results of this work are Student t-test to check the statistical significance of certain conditions originating in the perinatal period in relation to gender of the child and the Pearson correlation coefficient for the relationship between these conditions and complications of pregnancy. The Student t-test checks whether the mean values of a variable vary significantly between two independent samples. Pearson correlation coefficient r controls whether there is a linear correlation between two quantitative variables. Data from the 5 General Hospitals of Cyprus (Nicosia, Larnaka, Lemesos, Ammochostos and Pafos) for the year 2015 were used to implement the above two methods. The study was carried out using IBMSPSS 20 software package for Windows.

3. RESULTS

To check the zero hypothesis that the mean of the admitted to hospitals in Cyprus with the conditions originating in the perinatal period did not differ in gender of the child, the Student t-test statistical criterion was used. As can be seen in table 1, there is no statistically significant difference in the number of these conditions relative to gender.

<table>
<thead>
<tr>
<th>Certain conditions originating in the perinatal period</th>
<th>Males</th>
<th>Females</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery</td>
<td>753</td>
<td>618</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight</td>
<td>296</td>
<td>276</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Birth trauma</td>
<td>1</td>
<td>1</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Intrauterine hypoxia and birth asphyxia</td>
<td>26</td>
<td>21</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Other respiratory disorders originating in the perinatal period</td>
<td>211</td>
<td>132</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Congenital infectious and parasitic diseases</td>
<td>6</td>
<td>5</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Other infections specific to the perinatal period</td>
<td>19</td>
<td>9</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Haemolytic disease of fetus and new-born</td>
<td>10</td>
<td>12</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Other conditions originating in the perinatal period</td>
<td>160</td>
<td>127</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

Table 1: Student t-test

Table 2 shows the Pearson correlation coefficient among the total number of certain conditions originating in the perinatal period such as birth trauma and complications of pregnancy for the year 2015.

Table 2: Pearson correlation coefficient

<table>
<thead>
<tr>
<th>Certain conditions originating in the perinatal period</th>
<th>Pearson correlation</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complications of pregnancy</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Complications of pregnancy</td>
<td>0.839</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Table 3 shows the complications of pregnancy that were examined for their possible correlation with the certain conditions originating in the perinatal period shown in table 1 for 2015. As can be seen from Table 2, the Pearson correlation coefficient between the total number of the conditions originating in the perinatal period such as respiratory disorders and complications of pregnancy is 0.839 and is statistically significant (p-value<0.05), which indicates that there is a strong correlation between these conditions and complications of pregnancy.
Table 3: Complications of pregnancy

<table>
<thead>
<tr>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy, childbirth and the puerperium</td>
</tr>
<tr>
<td>Spontaneous abortion</td>
</tr>
<tr>
<td>Medical abortion</td>
</tr>
<tr>
<td>Other pregnancies with abortive outcome</td>
</tr>
<tr>
<td>Supervision of high risk pregnancy</td>
</tr>
<tr>
<td>Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium</td>
</tr>
<tr>
<td>Placenta praevia, premature separation of placenta and antepartum haemorrhage</td>
</tr>
<tr>
<td>Other maternal care related to fetus and amniotic cavity and possible delivery problems</td>
</tr>
<tr>
<td>Obstructed labour</td>
</tr>
<tr>
<td>Postpartum haemorrhage</td>
</tr>
<tr>
<td>Other complications of pregnancy and delivery</td>
</tr>
<tr>
<td>Single spontaneous delivery</td>
</tr>
<tr>
<td>Complications predominantly related to the puerperium and other obstetric conditions, not elsewhere classified</td>
</tr>
</tbody>
</table>

Table 4: Mortality

<table>
<thead>
<tr>
<th>Alive</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Certain conditions originating in the perinatal period</td>
<td>636</td>
</tr>
<tr>
<td>Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery</td>
<td>12</td>
</tr>
<tr>
<td>Slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight</td>
<td>271</td>
</tr>
<tr>
<td>Birth trauma</td>
<td>1</td>
</tr>
<tr>
<td>Intrauterine hypoxia and birth asphyxia</td>
<td>19</td>
</tr>
<tr>
<td>Other respiratory disorders originating in the perinatal period</td>
<td>171</td>
</tr>
<tr>
<td>Congenital infectious and parasitic diseases</td>
<td>6</td>
</tr>
<tr>
<td>Other infections specific to the perinatal period</td>
<td>18</td>
</tr>
<tr>
<td>Haemolytic disease of fetus and new-born</td>
<td>9</td>
</tr>
<tr>
<td>Other conditions originating in the perinatal period</td>
<td>129</td>
</tr>
</tbody>
</table>

As shown in Table 4, the highest number of the conditions originating in the perinatal period is observed in slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight. From all these conditions of perinatal period, most deaths are observed also in slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight.

4. DISCUSSION

Increasing attention should be given to the association between the conditions originating in the perinatal period and complications of pregnancy. It is noted that there is a strong correlation between these conditions and complications of pregnancy. Moreover, most deaths are observed in slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight. Nearly two thirds of the neonatal deaths are due to affections of perinatal origin [2]. High infant mortality rates highlight the importance of identifying and preventing risk factors and the underlying causes of neonatal mortality in order to reduce it.

5. CONCLUSIONS

This study has shown that there is a strong correlation between certain conditions originating in the perinatal period and complications of pregnancy. Moreover, from all these conditions of perinatal period, most deaths are observed in slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight.

DECLARATION OF INTEREST
The authors report no conflicts of interest.
REFERENCES