A comparative study of antepartum and postpartum eclampsia at a tertiary care centre

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ABSTRACT

Background: Hypertensive disorders complicate 5 to 10 percent of all pregnancies. Eclampsia is one of the dreaded complications of preeclampsia and remains one of the leading causes of maternal deaths in our country. The incidence of post-partum eclampsia is on the rise. Our aim was to study the incidence, demographical factors, and clinical profile associated complications, perinatal and maternal outcomes in pregnancies complicated with antepartum and postpartum eclampsia and compare between the two groups.

Methods: A prospective study was done of all pregnancies complicated with antepartum and postpartum eclampsia over a 10 month period from January 2014 to October 2014 managed at Karnataka institute of medical sciences, Hubli. The results were tabulated and analyzed.

Results: Incidence of antepartum eclampsia was 1.19% and postpartum eclampsia 0.31% amongst the patients delivered in Karnataka institute of medical science, Hubli. Average age of the patients was 24.1 years in the antepartum group and 22.7 yrs in postpartum group. Both antepartum and postpartum eclampsia was most commonly seen in primi gravidas. Though both the types of eclampsias were most commonly seen in term patients, preterm patients had a higher incidence of postpartum eclampsia. Majority of the patients of antepartum eclampsia had mild hypertension whereas postpartum eclampsia patients had mostly severe hypertension. Headache was the most common prodromal symptom in both groups. Neonatal mortality was higher in the postpartum group (44%), whereas maternal mortality was higher in the antepartum group (16.1%).

Conclusions: Incidence of eclampsia cases is high in tertiary care centres. Eclampsia is still one of the leading causes of maternal deaths in our country. Maternal and perinatal mortality is high in both antepartum and postpartum eclampsia cases. The incidence of postpartum eclampsia is significant. Patients with preeclampsia and eclampsia should be closely monitored postnatally and measures should be taken to prevent postpartum eclampsias.

Keywords: Antepartum eclampsia, Postpartum eclampsia, Preeclampsia, Maternal mortality, Perinatal mortality

INTRODUCTION

Hypertensive disorders complicate 5 to 10 percent of all pregnancies. Eclampsia is defined as the presence of seizures in a patient with preeclampsia, not attributable to other causes. 16 percent of maternal deaths are due to hypertensive disorders with eclampsia contributing significantly to these figures especially in the developing countries. Though many theories have been proposed to explain the pathogenesis of eclampsia, none have been proven conclusively. In India incidence of eclampsia is reported to be 0.32 to 2.2% of all deliveries. Eclamptic seizures can occur antepartum, intrapartum or postpartum. Postpartum eclampsia is not as rare a condition as once thought. Postpartum eclampsia can be subdivided into early postpartum eclampsia occurring within 48 hours and late postpartum eclampsia occurring after 48 hours. 10-25% of postpartum eclamptic seizures have been reported to be late postpartum.
METHODS

We conducted a prospective study of all pregnancies complicated with antepartum and postpartum eclampsia over a 10 month period from January 2014 to October 2014 managed at Karnataka institute of medical sciences, Hubli. The cases were divided into two groups. Group 1 comprised of patients who had only antepartum eclampsia. Group 2 consisted of patients admitted with postpartum eclampsia and those that were admitted in the antenatal period and developed postpartum eclampsia during the course of hospital stay. Data was collected regarding age, parity, period of gestation, B.P at admission, clinical features, prodormal symptoms, mode of delivery, complications, fetal birth weights, fetal outcome and maternal outcome. The results were tabulated and analyzed.

RESULTS

During the study period a total of 8257 patients delivered at Karnataka institute of medical sciences, Hubli. Of these 99 patients were diagnosed with antepartum eclampsia and 26 with postpartum eclampsia. The incidence of antepartum eclampsia was 1.19% of all deliveries and postpartum eclampsia was 0.31%. Only 5 out of 99 patients of antepartum eclampsia and 3 out of 26 patients with postpartum eclampsia had taken regular ANC. 6 patients in the first group and 3 in second group had not taken any ANC. Of the total 125 cases, 113 cases were referred from peripheral hospitals.

The youngest patients among these were 19 yrs (n=2) and the oldest was 37 years with mean age of the patients being 24.1 yrs in the antepartum group and 22.7 yrs in the postpartum group.

Distribution of patients as regards to age, parity, period of gestation, B.P at admission, prodormal symptoms, mode of delivery, fetal birth weight, fetal outcome is as shown in the tables.

Table 1: Age distribution.

<table>
<thead>
<tr>
<th>Age</th>
<th>Antepartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 yrs or less</td>
<td>6 (6%)</td>
<td>12 (46%)</td>
</tr>
<tr>
<td>21-25</td>
<td>48 (48.4%)</td>
<td>7 (27%)</td>
</tr>
<tr>
<td>26-30</td>
<td>43 (43.4%)</td>
<td>6 (23%)</td>
</tr>
<tr>
<td>31-35</td>
<td>1 (1%)</td>
<td>0</td>
</tr>
<tr>
<td>36 or more</td>
<td>1 (1%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Majority of the patients were primigravidas in both the groups and of term gestation.

Table 2: Parity.

<table>
<thead>
<tr>
<th>Gravida</th>
<th>Antepartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primi</td>
<td>58 (58.5%)</td>
<td>22 (84.6%)</td>
</tr>
<tr>
<td>G2</td>
<td>39 (39.4%)</td>
<td>3 (11.5%)</td>
</tr>
<tr>
<td>G3</td>
<td>2 (2%)</td>
<td>0</td>
</tr>
<tr>
<td>G4</td>
<td>0</td>
<td>1 (3.8%)</td>
</tr>
</tbody>
</table>

Table 3: Period of gestation.

<table>
<thead>
<tr>
<th>Gestation</th>
<th>Antepartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;28 weeks</td>
<td>1 (1%)</td>
<td>0</td>
</tr>
<tr>
<td>28-36.6 weeks</td>
<td>13 (13.1%)</td>
<td>10 (38.5%)</td>
</tr>
<tr>
<td>37-40 weeks</td>
<td>78 (78.8%)</td>
<td>13 (50%)</td>
</tr>
<tr>
<td>40.1-42 weeks</td>
<td>7 (7%)</td>
<td>2 (7.7%)</td>
</tr>
<tr>
<td>&gt;42 weeks</td>
<td>0</td>
<td>1 (3.8%)</td>
</tr>
</tbody>
</table>

Table 4: B.P at admission.

<table>
<thead>
<tr>
<th>Systolic BP</th>
<th>APE</th>
<th>PPE</th>
<th>Diastolic BP</th>
<th>APE</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>121-139</td>
<td>7</td>
<td>4</td>
<td>81-89 mm</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>140-159</td>
<td>37</td>
<td>8</td>
<td>90-99 mm</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>160-179</td>
<td>33</td>
<td>11</td>
<td>100-109 mm</td>
<td>42</td>
<td>15</td>
</tr>
<tr>
<td>180 and more</td>
<td>2</td>
<td>3</td>
<td>110-119</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>120 and &gt;</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Majority of the patients of antepartum eclampsia had mild hypertension whereas postpartum eclampsia patients had mostly severe hypertension.

Most patients in both groups experienced headache before the onset of seizures. Visual disturbances were next most common symptoms. Some patients experienced both these symptoms.

Table 5: Prodormal symptoms.

<table>
<thead>
<tr>
<th>Prodormal symptoms</th>
<th>Antepartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>85 (85.6%)</td>
<td>15 (57.7%)</td>
</tr>
<tr>
<td>Visual disturbance</td>
<td>10 (10.1%)</td>
<td>4 (15.3%)</td>
</tr>
<tr>
<td>Epigastric pain</td>
<td>2 (2%)</td>
<td>1 (3.8%)</td>
</tr>
<tr>
<td>Dyspnoea</td>
<td>0</td>
<td>1 (3.8%)</td>
</tr>
<tr>
<td>None</td>
<td>5 (5%)</td>
<td>11 (42.3%)</td>
</tr>
</tbody>
</table>

Majority patients delivered vaginally in both groups.
Delivery | Antepartum | Postpartum  
--- | --- | ---  
Vaginal | 71 (71.7%) | 15 (57.7%)  
Cesarean | 28 (28.2%) | 11 (42.3%)  

Table 7: Fetal birth weight.

| Birth weight | Antepartum | Postpartum  
--- | --- | ---  
<1500 gms | 2 (2%) | 5 (19.2%)  
1500-2000 gms | 10 (10.1%) | 12 (46.1%)  
2001-2500 gms | 20 (20.2%) | 13 (50%)  
2501-3000 gms | 54 (54.5%) | 5 (19.2%)  
3001-3500 gms | 13 (13.1%) | 1 (3.8%)  
>3501 gms | 0 | 0  

Table 8: Fetal outcome.

| Fetal outcome | Antepartum | Postpartum  
--- | --- | ---  
Live births | 93 (93.9%) | 17 (65.3%)  
Still births | 6 (6%) | 9 (34.6%)  
Neonatal deaths | 10 (10.1%) | 7 (26.9%)  

Fetal outcome was worse in post-partum eclampsia cases but then more babies delivered by this group of patients were low birth weight babies and preterm.

Thrombocytopenia was seen in 21 cases in group 1 and 6 cases in group 2.

Altered coagulation profile was seen in 11 cases in group 1 and 5 cases in group 2.

4 patients in group 1 developed pulmonary edema. There were total of 65 maternal deaths during the study period. Of these 19 (29.2%) deaths were seen in eclampsia patients. There were 16 (16.1%) deaths in the antepartum group and 3 (11.5%) in the postpartum group. Karnataka institute of medical sciences, Hubli being a tertiary care centre with a wide referral area and many complicated cases are referred here accounting for a higher maternal mortality rate.

DISCUSSION

It is estimated that current incidence of eclampsia is 5%-8% amongst women developing pre-eclampsia in the developing countries. Though the incidence of eclampsia in India has been reported to be 0.7 to 2.2% by various authors and this is comparable to our study, it cannot be generalized to the entire population as most studies are reported from tertiary care and referral centres.\(^5\)\(^-\)\(^8\) Antepartum eclampsia is associated with high maternal morbidity and mortality and is an indication for immediate termination of pregnancy.\(^10\)\(^,\)\(^11\) Use of magnesium sulphate reduces the mortality rates in eclampsia.\(^12\) Leitch and colleagues showed that over a 60 year period the incidence of eclampsia had fallen from 74/10000 to 7.4/10000.\(^9\) This can be attributed to widespread increase in antenatal care and use of prophylactic magnesium sulphate regimens.\(^13\) The incidence of postpartum eclampsia has however increased and postpartum eclampsia is not as rare a condition as was once thought.\(^5\) Watson et al reviewed 132 cases of eclampsia and found that 37 (27%) occurred in the postpartum period.\(^14\) Of these 17 (47%) occurred at least 48 hours postpartum. In our study postpartum eclampsias accounted for 20.8% of all eclampsia cases which is comparable to other Indian studies by Parneet Kaur (20%) Sunita TH (18%) et al.\(^6\)\(^,\)\(^15\)

Most patients in our study who developed antepartum eclampsia were from 21-25 years age group which is comparable to the study by Neelam Rajput et al.\(^16\) and Pradeep MR et al who have presented a similar type of study from south Karnataka region.\(^17\) However most of our postpartum eclampsia patients were from a younger age group, 46% being 20 years or less comparable to the age distribution reported by Choudhary et al.\(^18\)

Majority of our patients from both groups were primigravida which is true for all other studies reported from the Indian subcontinent.\(^6\)\(^,\)\(^15\)\(^,\)\(^18\)\(^,\)\(^19\)\(^,\)\(^20\) In both the groups majority patients were 37-40 weeks gestation which is comparable to studies by Malay Sarakar, Sunita TH et al.\(^6\)\(^,\)\(^21\) However the incidence of preterm patients was much higher in the postpartum group compared to antepartum group.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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