Obstetric intensive care admissions at a tertiary hospital in Limpopo Province, South Africa

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Objective. To determine the characteristics of obstetric patients admitted to the intensive care unit (ICU) at a tertiary hospital in the Limpopo Province, South Africa.

Methods. Hospital files of all obstetric patients admitted to the Pietersburg provincial referral hospital ICU from 1 January 2008 to 31 December 2012 were retrospectively reviewed. Age, parity, admission diagnosis, length of stay, information on the referring hospitals, and maternal outcomes were analysed.

Results. There were 138 obstetric ICU admissions during the study period (6.7% of all ICU admissions and 0.95% of all deliveries). The most common reasons for obstetric ICU admissions were pre-eclampsia or eclampsia (52.9%, n=73/138) and obstetric haemorrhage (18.1%, n=25/138). The mean age of the patients was 28 years, and mean duration of ICU stay was 8 days (range 0 - 163 days). Forty-eight maternal deaths occurred (34.8%), and of these, 27 were referrals from other hospitals (district and regional hospitals). Pre-eclampsia or eclampsia accounted for 25 (52%) of all deaths.

Conclusion. Obstetric patients formed a small proportion of ICU admissions, but mortality among these patients was high. It is recommended that obstetric registrars rotate through a multidisciplinary ICU, and the need for a critical care specialist should be considered.

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Methods

A retrospective review of obstetric admissions to the ICU of Pietersburg Hospital, Limpopo, SA, was carried out over a period of 5 years (1 January 2008 to 31 December 2012). The 12-bed multidisciplinary ICU admitted 350 - 450 patients on average per annum. ICU admission in this institution is based on the clinical judgment of the admitting discipline in consultation with an anaesthetist.

The ICU records and patient files were extracted and reviewed. Ethics approval to conduct the study was obtained from the University of Limpopo ethics committee, and anonymity and confidentiality of patient personal information were protected. The data for the study were collected by a trained nurse assistant. The data collected included patient age, parity, admission diagnosis, length of stay in the ICU and maternal outcome. Categorical data were displayed as percentages; continuous data were reported as mean (standard deviation (SD)). Statistical software (STATA 9.0, StataCorp, USA) was used for data analysis.

Results

Over the 5-year period, 138 obstetric patients were admitted (6.7% of 2 073 ICU admissions and 0.95% of 14 478 deliveries at the hospital). Six patients were admitted twice, and two of these patients died. The characteristics of the admitted obstetric patients are presented in Table 1. The average age of the patients was 28 (8.1) years (range 16 - 45 years). More than half (n=79/138) of the patients had a parity of 2 or more. Sixty-two patients (45%) were referred, and the majority of the referred patients were from district hospitals (n=53/62 (86%)). Table 2 shows the yearly obstetric deliveries and maternal ICU admissions from 2008 to 2012. The indications for admission and outcome of obstetric ICU admissions are shown in Table 3. Pregnancy-induced hypertension (52.9%, n=73/138) and severe obstetric haemorrhage (18.1%,
n=25/138) were the most frequent causes of admission. Eleven of the patients with pre-eclampsia or eclampsia presented

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Total, n (%)</th>
<th>Survivors, n (%)</th>
<th>Non-survivors, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-eclampsia or eclampsia</td>
<td>73 (52.9)</td>
<td>48 (66)</td>
<td>25 (34)</td>
</tr>
<tr>
<td>Obstetric haemorrhage</td>
<td>25 (18.1)</td>
<td>16 (64)</td>
<td>9 (36)</td>
</tr>
<tr>
<td>Anaesthetic complication (spinal)</td>
<td>8 (5.8)</td>
<td>5 (62)</td>
<td>3 (38)</td>
</tr>
<tr>
<td>Ruptured ectopic pregnancy</td>
<td>4 (2.9)</td>
<td>3 (75)</td>
<td>1 (25)</td>
</tr>
<tr>
<td>Pulmonary oedema</td>
<td>4 (2.9)</td>
<td>3 (75)</td>
<td>1 (25)</td>
</tr>
<tr>
<td>Renal failure</td>
<td>4 (2.9)</td>
<td>2 (50)</td>
<td>2 (50)</td>
</tr>
<tr>
<td>Ruptured uterus</td>
<td>4 (2.9)</td>
<td>3 (75)</td>
<td>1 (25)</td>
</tr>
<tr>
<td>Placenta abruptio</td>
<td>3 (2.2)</td>
<td>2 (67)</td>
<td>1 (33)</td>
</tr>
<tr>
<td>Peripartum cardiomyopathy</td>
<td>2 (1.4)</td>
<td>1 (50)</td>
<td>1 (50)</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>2 (1.4)</td>
<td>2 (100)</td>
<td>-</td>
</tr>
<tr>
<td>Postabortalional sepsis</td>
<td>2 (1.4)</td>
<td>2 (100)</td>
<td>-</td>
</tr>
<tr>
<td>Abdominal pregnancy</td>
<td>1 (0.7)</td>
<td>1 (100)</td>
<td>-</td>
</tr>
<tr>
<td>Bowel obstruction</td>
<td>1 (0.7)</td>
<td>-</td>
<td>1 (100)</td>
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<tr>
<td>Hepatic encephalopathy</td>
<td>1 (0.7)</td>
<td>-</td>
<td>1 (100)</td>
</tr>
<tr>
<td>Hypokalaemia</td>
<td>1 (0.7)</td>
<td>-</td>
<td>1 (100)</td>
</tr>
<tr>
<td>Parasuicide</td>
<td>1 (0.7)</td>
<td>1 (100)</td>
<td>-</td>
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<tr>
<td>Tuberculosus</td>
<td>1 (0.7)</td>
<td>-</td>
<td>1 (100)</td>
</tr>
<tr>
<td>Septicaemia during labour</td>
<td>1 (0.7)</td>
<td>1 (100)</td>
<td>-</td>
</tr>
</tbody>
</table>
study period. Finally, in this 12-bed, multidisciplinary ICU, the severity of illness is assessed using the SOFA (Sequential Organ Failure Assessment) score; however, the scores were incomplete for obstetric ICU admissions.

**Conclusion**

In this 12-bed, multidisciplinary ICU, we found that obstetric patients form a small proportion of ICU admissions but the mortality is high. It is recommended that obstetric registrars rotate through a multidisciplinary ICU, and the need for a critical care specialist should be considered.

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**References**