

A Review of Obstetric Cases in Intensive Care unit of a Tertiary Care Hospital of West Bengal

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Abstract

India is still a country with high maternal mortality rate of 178 per 100000 live births. Since severe obstetric morbidities and complications are directly linked to ICU admission, we conducted a study in a tertiary care hospital to determine the rate of ICU admission of obstetric patients and their underlying causes. The results show primigravida to be most vulnerable and haemorrhage due to a variety of underlying etiologies to be the most common cause of ICU admission. Eclampsia, respiratory distress, electrolyte imbalance, anaphylactic reaction, hypotension, ectopic pregnancy are some of the most common causes.

Keywords: Obstetric Cases in Intensive Care.

Introduction

The need of critical care unit is increasing day by day in both developing and developed world. Maternal mortality rate is an important indicator in respect to public health. Lots of improvement in management of ante-natal care has been done but still the target of maternal mortality is not achieved. Currently maternal mortality in India is around 178 per 100000 live births in spite of different government safe motherhood programs. As per WHO "there is a

story behind every maternal death or life threatening complications" [1]. Common cause for ICU admission in obstetric patients are eclampsia, Pre-eclampsia, obstetric haemorrhage, sepsis, unsafe abortion [2,3,4]. Critical obstetric patients are always a challenge for the physician and the obstetrician because it needs a multi-discipline approach. Very few studies have been conducted on obstetric admission in ICU so we took this study to evaluate the incidence, indication and out-come of the obstetric patients requiring admission in ICU.

Methodology

A retrospective cohort study was conducted in a 16 bedded ICU in the 500 bedded hospital of VIMS (Vivekananda institute of medical sciences), West Bengal over the period of 1 year. The study population comprised of all the obstetric admission over the period of 1year (2014-2015) in the ICU. The ICU is a closed unit with well-equipped trained staff and physician.

We collected all the data comprising of demography, date of admission, diagnosis, parity, antenatal checkup, mode of delivery, operative findings, cause and the relevant incident in the ICU, date of discharge or mortality, advice on discharge and all the investigations done in this time period from the ICU data base and record section. A total 46 cases were admitted in this time period with obstetric complications. Analysis of all the data was done by using appropriate statistical software comprising of total admission in the ICU and total number of delivery done in this tenure.

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Result

A very few percentage of patients who were admitted in ICU, were from gynecological background. A total 46 patients were admitted in the ICU in this time period. Most of them were 20 to 30 years (45.7%) followed by 30 to 40 years (44.3%) and only few were (10.9%) below 20 years of age (Table 1).

Most of the patients were primigravida (52%) followed by 2nd gravida more than (40%) and few of them were multigravida with a parity of third or fourth (Table 2).

Table 1: Age distribution in study population

<20 years	10.9%
20-30 years	45.7%
30-40 years	44.3%

Table 2: Distribution according to parity

Primi-gravida	52%
Second gravida	45.7%
Multigravida	2.3%

Most of them were predicted as ante-natal complicated cases and booked cases were almost 60%. And around 34.5% of patients were unbooked cases and only 6.5% were admitted directly from emergency.

Regarding diagnosis most of the patients admitted in ICU were suffering from haemorrhage (38.1%). In patients with haemorrhage could be further classified according to cause such as post partum haemorrhage (PPH), due to atony of uterus, trauma, retained products, coagulation disorder, PPH with elevated liver enzyme, and ectopic pregnancy. Eclampsia was another cause for which many patients were admitted in ICU followed by high blood pressure, respiratory distress, anaphylactic reaction and diabetic keto-acidosis. (Table 3).

Table 3: Causes of admission in ICU

Haemorrhage shock	38.1%
Elevated B.P	13%
Diabetic keto-acidosis	2.2%
PPH due to coagulation disorder	2.2%
Ectopic pregnancy	13%
Anaphylactic reaction	6.5%
Respiratory distress	6.5%
Electrolyte imbalance	4.4%
Hyperbillirubinemia	2.2%
For control of GDM	5.4%
Hypotension	6.5%

Discussion

A relatively few patients required ICU care in respect to maternal mortality. Management of this patients required a careful multi-disciplinary involvement. In our population 5.9% of the total ICU patients (767) were obstetric patients and 0.93% (4931) of total admission in obstetric ward. According to American Association of Family Medicine only 0.4% of the obstetric population need ICU admission [6]. In some studies the admission rate of obstetric patients in ICU was less than <1% but those were mainly in developed country where antenatal care is much improved. This finding is similar to other studies conducted in developing countries, where the admission rate was found to be between 1 to 10% [7-9]. In our study group majority of patients were admitted due to haemodynamic instability which were managed by blood or blood product and adequate fluid replacement along with antibiotics in case of infection. In our patients population we lost two patients, one due to PPH and deranged liver function and another due to respiratory failure with multi organ failure (MODS). In our study most prevalent cause of admission was haemorrhage (53.3%) mostly due to PPH which is similar to the finding of other study like Kipatrick SJ and Matthey MA [10], where they found it to be 66%. This high rate of admission in the ICU due to obstetric haemorrhage may be due to significant alteration in haemodynamic condition and improper timing of intervention or delayed intervention. Diabetes, respiratory disease and hyperbilirubinemia were other causes for which patients were admitted as booked cases assuming their need for ICU. Hypertension was the second most common cause (13%) for which patients were admitted along with ectopic pregnancy which had similar prevalence in our study group. The high rate of admission due to ectopic pregnancy was probably lack of availability of ultrasonography in the rural settings and lack of awareness in the general people regarding health hazard during pregnancy. We had to give seventeen patients mechanical ventilation during their stay in ICU which was about 36.95% which is higher than Osinaike et al study [11] where the rate of mechanical ventilation was 27%. The most common reason of ventilation was due to haemorrhagic patients acquiring infection which led to sepsis in a significant number of patients, respiratory failure being another common cause. Infection was the most common cause for the increased stay in hospital. 28.26% of patients acquired cross infection during their stay in ICU. Anaphylactic reaction was also a cause for admission in ICU which was an added finding in our study group with few

studies reporting it. However the comparatively low MMR in our study group may be due to the fact that many patients were discharged on risk bond due to incapability of the family member of poor socioeconomic condition to bear the escalating cost of treatment in an ICU setting.

Limitation

Every study has their limitation and our study was not devoid of it. Firstly short period of study with limited number of patients. Lack of proper antenatal report was another shortage. Motivation not only to the patients but also to their relatives too for long term staying in hospital was also a cause for increase number of DORB patients.

References

1. Making pregnancy safer. WHO Regional office for Europe. Available from: <http://www.euro.who.int/pregnancy>. Last accessed on 2008 Sep.
2. Richa F, Karim N, Yazbeck P. Obstetric admissions to the intensive care unit: An eight year review. *J Med Liban* 2008;56(4):215-19.
3. Keizer JL, Zwart JJ, Meerman RH, Harinck BL, Feuth HD, Van Roosmalen J. Obstetric intensive care admissions: A 12-year review in a tertiary care centre. *Eur J Obstet Gynecol Reprod Biol* 2006;128(1-2):152-56. [<http://dx.doi.org/10.1016/j.ejogrb.2005.12.013>].
4. Vasquez DN, Estenssoro E, Canales HS, et al. Clinical characteristics and outcomes of obstetric patients requiring ICU admission. *Chest* 2007;131(3):718-24. [<http://dx.doi.org/10.1378/chest.06-2388>].
5. Ntuli, Sam & Ogunbanjo, Gboyega & Nesengani, Steven & Maboya, Edwin & Gibango, Muyima. (2015). Obstetric intensive care admissions at a tertiary hospital in Limpopo Province, South Africa. *Southern African Journal of Critical Care*. 31.8.10.7196/SAJCC.164.
6. Munench MV, Baschat AA, Malinow AM, Mighty HE. Analysis of disease in the obstetric ICU at university Referral Centre: A 24 months review of prospective data. *J Reprod Med*. 2008;53(12):914-20.
7. Platteau P, Engelhardt T, Moodley J, Muckart DJ. Obstetric and gynaecological patients in an intensive care unit: A 1 year review. *Trop Doctor* 1997;27(4):2002-06.
8. Cohen J, Singer P, Kogan A, Hod M, Bar J. Course and outcome of obstetric patients in a general intensive care unit. *Acta Obstet Gynecol Scand* 2000;79(10):846-850.
9. Okafor UV, Aniebue U. Admission pattern and outcome in critical care obstetric patients. *Int J Obstet Anesth* 2004;13(3):164-66. [<http://dx.doi.org/10.1016/j.ijoa.2004.04.002>].
10. Kilpatrick SJ, Matthay MA. Obstetric patients requiring critical care: a five year review. *Chest*. 1992;101(5):1407-12.
11. Osinaike B, Amanor - Boadu SD, Sansui AA. Obstetric intensive care: a developing country experience. *The Internet Journal of Anesthesiology*. 2006;10:2.