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Original Research Article

A Retrospective Study of Admissions from Obstetric Operation Room to Surgical Intensive Care Unit in Tertiary Care Institute

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Abstract: Obstetric patients stand on a spectrum ranging from very simple to critically ill. Occupancy of beds in intensive care unit by critically ill obstetric patients has an impact on maternal morbidity and mortality. Purpose of present study was to evaluate surgical intensive care unit admissions from obstetric operation room and analyze the workload of obstetric patients in surgical intensive care unit. Retrospective observational study of patients who were shifted from obstetric operation room to surgical intensive care unit. Total 2522 obstetric patients were operated in year 2016. Thirty five patients (1.38%) were shifted to surgical intensive care unit. Out of total 597 patients in surgical intensive care unit, 35 (6.2%) patients were from obstetric operation room. Eclampsia and obstetric hemorrhage were major contributors for shifting the patients from obstetric operation room to surgical intensive care unit was carried out. Most of the patients were operated on an emergency basis.
Keywords: Obstetric patients, surgical intensive care unit (SICU)

INTRODUCTION

Patients come to obstetric operation room for surgeries like lower segment caesarian section (LSCS), laparotomy for ruptured ectopic pregnancy, evacuation of incomplete abortion etc. Obstetric patients are challenge to anesthesiologists and obstetrician due to altered physiology in pregnancy, focus on fetal wellbeing and unique type of disorders like obstetric hemorrhage, pregnancy induced hypertension, eclampsia, anemia etc [1]. Most of the time complications are not expected and occur as emergencies. Patients are shifted to ICU either due to preexisting disorders or anaesthesia and surgery related complications. This has major impact on maternal morbidity and mortality.

Surgical intensive care unit is meant for critically ill patients who need observation and intervention in postoperative period. Management of critically ill obstetric patients in intensive care unit can improve their prognosis. Though these patients represent a small proportion in ICU, mortality is high (3 to 21%) [2]. Critically ill obstetric patients account for 7% admissions in developing countries and 0.1 to 0.9% in developed countries [3, 4]. Some institutes have high dependency unit and obstetric ICU, but most use general surgical or medical intensive care unit for the management of critically ill obstetric patients [5]. Lack of awareness and absence of regular antenatal visits by patients are factors leading to referral in moribund condition with multiple organ damage. Publications are available reporting ICU admissions of obstetric patients in general i. e. from labour room, operation room, wards etc. Negligible data is available on ICU admissions especially from obstetric operation room. Therefore this study was done to evaluate surgical intensive care unit admissions from obstetric operation room and analyze the workload of obstetric patients in surgical intensive care unit.

METHODS

Retrospective observational study was conducted at tertiary care institute. Data were collected from 1st Jan. 2016 to 31st Dec 2016. The study population comprised of SICU admissions of patients from obstetric operation room. The records of obstetric

operation room and SICU were utilized for data collection. Records were evaluated for perioperative risk factors, anaesthesia technique, any surgery or anaesthesia related complications. Reasons for SICU admissions were studied in details. Study did not include non-operated obstetric patients shifted to medical intensive care unit and patients in labour room. Data were expressed as number and percentage.

RESULTS

Total number of obstetric patients operated in the year 2016 were 2522. Of the total 2522 patients, 9.7% comprised of PIH, 2.7% hemorrhage, 2.3% anaemia, 1.4% eclampsia and 0.4% heart disease. Patients operated on emergency basis were 88.7% and on elective basis only 11.6%. Maximum patients (86%) were operated under regional anaesthesia, 12% under general anaesthesia without endotracheal intubation and 2% under general anaesthesia with endotracheal intubation. Out of total 2522 operated patients, 35 were shifted to SICU. Out of 35 patients, 15(42.86%) were of eclampsia, 10(28.57%) of hemorrhage, 4(11.43%) of PIH, 3(8.57%) of severe anaemia and 3(8.57%) of heart disease. Total number of patients admitted in SICU in 2016 was 597. Percentage of obstetric patients in SICU was 6.2.

Table-1: Nature of Surgery

Surgery	n	Percentage (%)
Elective	284	11.26
Emergency	2238	88.74
Total	2522	100

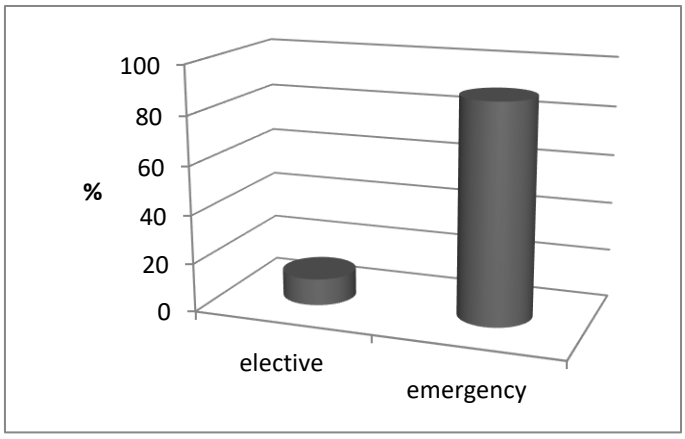

Fig-1: Nature of Surgery

Table-2: Anaesthesia Technique

Anaesthesia Technique	n	Percentage (%)
Regional Anaesthesia	2166	86
General Anaesthesia without endotracheal intubation	311	12
General Anaesthesia with endotracheal intubation	45	2
Total	2522	100

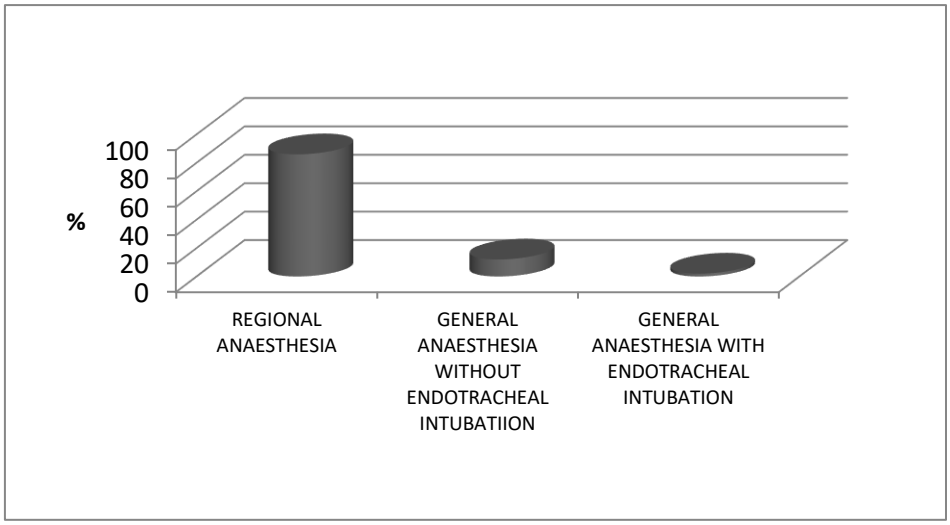

Fig-2: Anaesthesia Technique

Table-3: Perioperative Risk Factors of operated obstetric patients

Risk Factors	n	Percentage (%)
PIH	245	9.7
Haemorrhage	68	2.7
Anaemia	58	2.3
Eclampsia	35	1.4
Heart Disease	10	0.4
Total	416	16

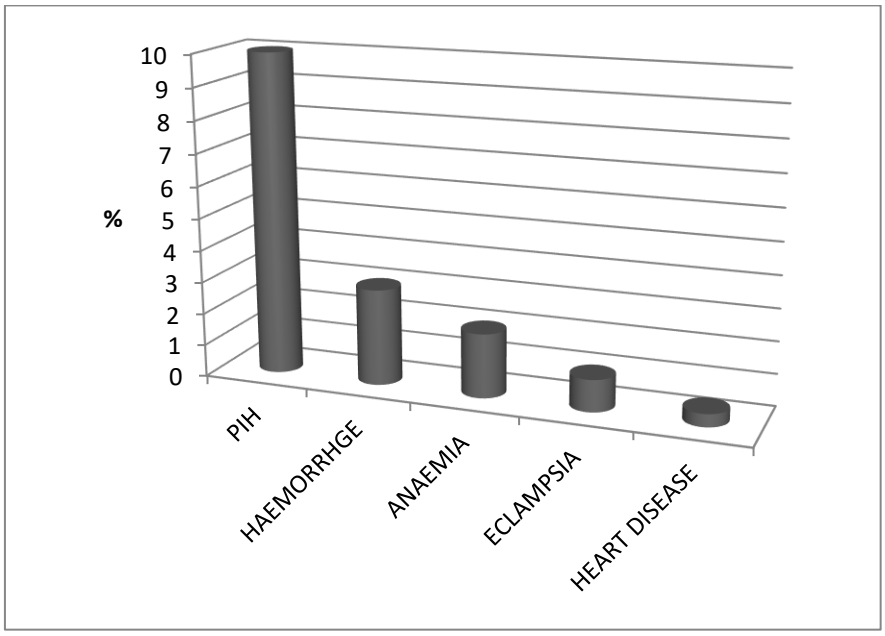

Fig-3: Perioperative Risk Factors of Operated Patients

Table-4: Load of obstetric patients in SICU

Total number of patients in SICU in 2016	Obstetric patients in SICU in 2016	Percentage (%)
597	35	6.2

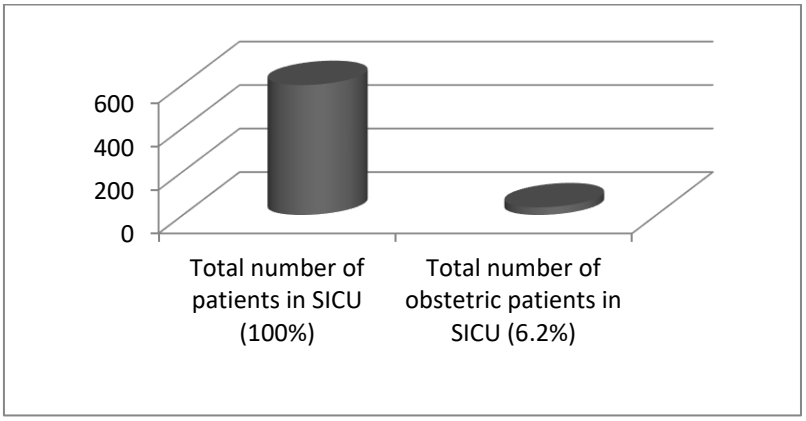

Fig-4: Load of obstetric patients in SICU

Table-5: Risk factors of patients admitted in SICU (Out of 35 Patients)

Risk factors	**n**	**Percentage (%)**
Eclampsia	15	42.86
Haemorrhage	10	28.57
PIH	4	11.43
Severe Anaemia	3	8.57
Heart Disease	3	8.57
Anaesthesia related complications	0	0
Total	35	100

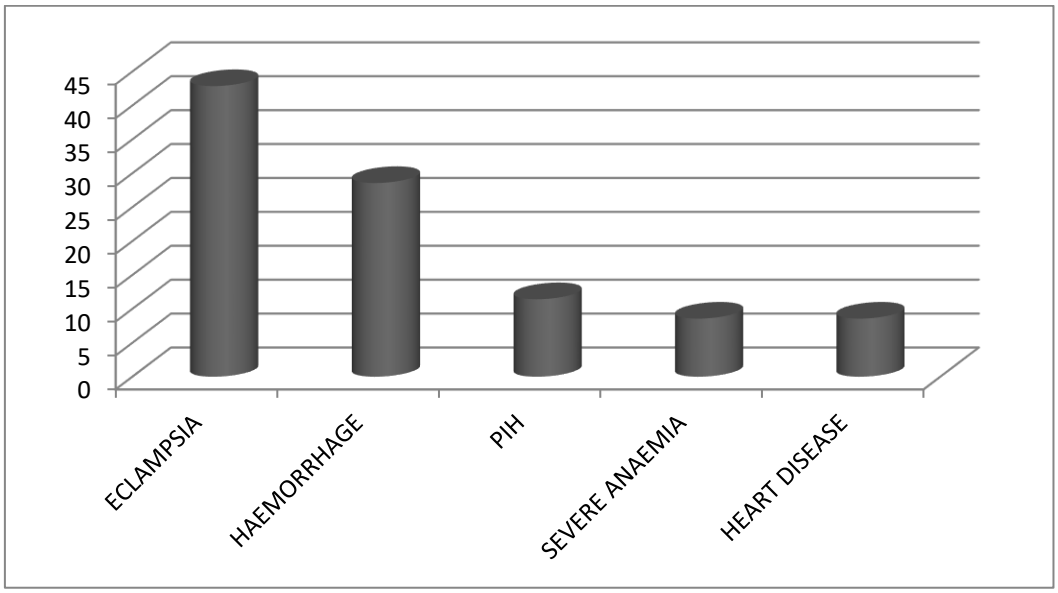

Fig-5: Risk Factors of Patients admitted in SICU

Table-6: Comparison of perioperative risk factor and SICU admission

Risk Factors	Number of obstetric patients operated	Number of obstetric patients shifted to SICU	Percentage (%)
Eclampsia	35	15	42.85
Heart Disease	10	3	30
Heamorrhage	68	10	14.7
Anaemia	58	3	5.17
PIH	245	4	1.63

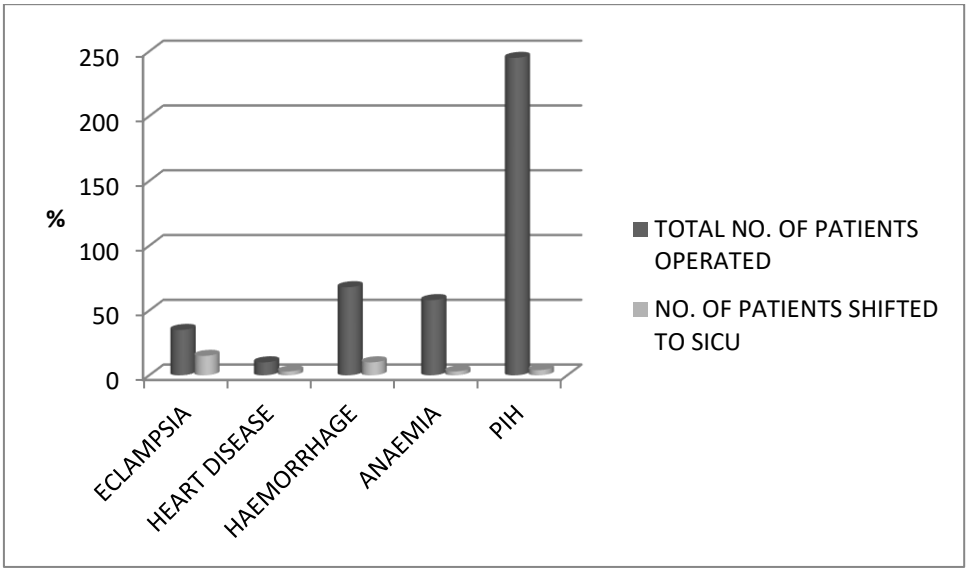

Fig-6: Comparison of Perioperative Risk Factors and SICU Admissions

DISCUSSION

Tremendous decrease in maternal mortality rate is observed in developed countries because of improvement in maternal care, but maternal mortality remains a challenge in developing countries [6]. Incidence of intensive care admissions at tertiary level institution depends on peripheral health care, local traditions and culture. A fraction of patients need intensive care admissions due to prior risk factors and life threatening complications arising in perioperative period [7]. Intensive care unit gives an opportunity to improve patient care by vigorous monitoring and treatment by multidisciplinary approach which is not possible in general wards. In our institution, operated critically ill obstetric patients are shifted to surgical intensive care unit.

Demographically all patients were in reproductive age group. In our institution total 2522 patients were operated in year 2016 at obstetric operation room. Of these 88.74% patients received anaesthesia for emergency surgeries and 11.26% for elective surgeries. Regional anaesthesia was commonly used technique (86%), general anaesthesia without endotracheal intubation was given to 12% patients and general anaesthesia with endotracheal intubation was used only for 2% patients. Similar percentage of anaesthesia technique was recorded in retrospective study of Melek Aksoy *et al.* [8]. The regional anaesthesia technique in obstetric patients is considered safe compared to general anaesthesia for both mother and baby [9]. Maternal satisfaction is also good in regional anaesthesia [10]. Out of 2522 patients, 416(16%) had perioperative risk factors in the form of PIH (9.7%), obstetric haemorrhage (2.7%), anaemia (2.3%), eclampsia (1.4%) and heart disease (0.4%). Of the total 2522 operated obstetric patients, 35(1.38%) were admitted in SICU. Jose Orsini *et al*. reported 0.9% ICU admissions [2]. The reason for high rate of SICU admission may be due to lack of high dependency unit at our institution.

A total 597 patients were admitted in SICU in year 2016 at our institution. Of these 35(6.2%) were

obstetric patients. Our result is comparable with the study of Gomber *et al*. who found 6% of all obstetric admission to ICU [11]. Of the obstetric patients admitted in SICU, maximum patients were of eclampsia (42.86%) and haemorrhage (28.57%). One study reported 48.8% patients of eclampsia and 37.2% patients of obstetric haemorrhage admitted in ICU [12]. When the comparison of preoperative risk factors and SICU admissions was done, it was found that maximum patients of eclampsia (42%), heart disease (30%) and haemorrhage (15%) were shifted to SICU. There were no SICU admissions due to anaesthesia related complications in year 2016. Mortality rate of obstetric patients in SICU was 11%. Most of the studies reported mortality rate in ICU ranging from 3 to 21%.

In our study we focused on operated obstetric patients with perioperative risk factors who needed admission in SICU. There are negligible references addressing SICU admissions of operated obstetric patients. The limitation of this study was that we could not establish exact load of non-operated critically ill obstetric patients who were shifted to medical ICU.

CONCLUSION

Thus, from the present retrospective study it is concluded that eclampsia and haemorrhage were the main perioperative risk factors for 1.38% SICU admissions from obstetric operation room, representing 6.2% load of operated obstetric patients in SICU.

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