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Outcome of emergency peripartum hysterectomy in teaching hospital: A two year retrospective cohort study

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Abstract
Introduction: Emergency peripartum hysterectomy (EPH) is performed when there is unresponsive to conservative management as a lifesaving procedure. Peripartum hysterectomy is a major operation and is invariably performed in the presence of life threatening haemorrhage during or immediately after abdominal or vaginal deliveries.The aim of the study was to find the incidence, indications, outcome and complications of EPH performed in Tertiary care teaching hospital.
Materials and Methods: A retrospective study of cases of emergency peripartum hysterectomy which were performed in the period January 2013 to December 2014 at Belgaum Institute of Medical Sciences Tertiary care teaching hospital. Records of all cases who had undergone EPH were analyzed for age, parity, rural/urban, mode of delivery, place of delivery, indications, number of blood and blood component transfusions, complications, duration of stay, maternal and neonatal outcome. The data was analyzed for descriptive statistics using SPSS software.
Results: Out of 13,607 deliveries 'between' January 2013 to December 2014. A total of 24 patients underwent emergency peripartum hysterectomy (EPH). Mean age of patients was 26.08±3.63.Patients with multigravida were 21(87.50 %), Primigravida were 3 (12.50%). and all were from rural population. Incidence of EPH in our study is 1.764/1000 births. The highest risk factor was abruption in 33.33% of the patients (n=8).
Conclusion: Peripartum hysterectomy is a foremost lifesaving operation. The incidence of EPH was high in our study. Most common indication is uterine atony. It was more in multigravida and unregistered cases. Along with EPH blood component transfusions and obstetric intensive care were associated with quick recovery. There is need to improve basic and emergency obstetric care at peripheries in order to prevent post-partum hemorrhage and EPH.

Keywords: emergency Peripartum hysterectomy, indications, uterine Atony, maternal morbidity and mortality

Introduction

Emergency peripartum hysterectomy (EPH) is a lifesaving surgical procedure to manage uncontrolled obstetric hemorrhage during or immediately after vaginal and caesarean section (CS) deliveries, when all conservative measures have failed to achieve homeostasis [1]. In spite of the evolution of obstetrics, EPH remains a dramatic operation burdened by significant maternal morbidity and mortality, partly explained by the unplanned nature of this surgery and the need for performing it expeditiously [2]. The procedure is usually performed when all conservative measures have failed to achieve hemostasis during life threatening obstetric hemorrhage. Such hemorrhage may be due to abnormal placentation (e.g. placenta accrete) uterine atony, uterine rupture, leiomyoma, coagulopathy, or laceration of a uterine vessel not treatable by conservative measures. The incidence of Emergency peripartum hysterectomy has wide variation. The incidence of EPH in developing countries comparatively high compared to developed countries. In India the rate of EPH is 2.6 per 1000 births [3]. The most common cause of EPH in developing countries are uterine atony and rupture. In developed countries the most common indication is placenta accreta [4]. The purpose of this study was to determine the incidence, indications, risk factors and complications associated with emergency peripartum hysterectomies performed at the tertiary teaching hospital of Belgaum Institute of Medical Sciences and to compare the results with the literature data.

Materials and Methods

All cases of EPH performed "between" January 2013 to December 2014at the Department of Gynecology and Obstetrics, Belgaum Institute of Medical Sciences were retrospectively collected. According to the literature definition of EPH, all hysterectomies done for intractable bleeding not responding to other treatments at the time or within 24 h of vaginal or abdominal delivery were included. Women delivering with gestational age less than 24 weeks were excluded. Peripartum hysterectomies performed for gynecological reasons, such as cancer, or elective caesarean hysterectomies for obstetric reasons were also excluded. Indications for EPH such as Atonic Uterus, Rupture uterus, Placenta previa were analyzed. Similarly risk factors of EPH like Abruption, Pre-eclampsia, prolonged labour, Previous LSCS, Placenta previa, Instrumental delivery, Inversion of uterus were analyzed. Other complications associated with EPH Complications, Acute kidney injury, Hypovolumic shock, Hypertension, Disseminated intravascular coagulation, postpartum psychosis, Uterovaginal fistula, No complication were analyzed. The data were entered into Microsoft excel data base and statistical analysis was done using SPSS statistical software version 20.0, Chicago, Armonk, NY, USA.

Results

During the study period from January 2013 to December 2014, there were a total of 13,607 deliveries. There were total 24 patients who underwent emergency peripartum hysterectomy (EPH). Mean age of patients was 26.08±3.63 years. 87.50% (n=21) of the patients were multigravida and all were from rural population. The demographic profile of patients is shown in Table 1. Incidence of EPH in our study is 1.764/1000 births. Most common indication of EPH in our study is atonic uterus. Table 2 represents the indication for EPH, which shows that 76.16% (n=19) were atonic uterus whereas placenta previa was less in 2 patients with 8.33%. The risk factor for EPH showed (Table 3) multiple risk factors in several patients. The highest risk factor was abruption in 33.33% of the patients (n=8).The mode of delivery in patients was cesarean section in 54.17% (n=13) presented in (Table 4). All patients received PCV, whereas only 2 patients received cryoprecipitate Figure 1. In the present study associated complications were analyzed which revealed that acute kidney injury was the most high in 25% of the patients (n=6), other complications are represented in Table 5. However some patients had multiple complications in the study performed. Two patients undergone bilateral internal iliac ligation immediately following EPH. Three patients' undergone relapratomy and undergone bilateral internal iliac artery ligation. Subtotal hysterectomy done in 21 cases and total hysterectomy done in 3 cases. (2 placenta previa and one case of rupture uterus)Maximum duration of stay was 32 days. Mean duration of stay-11 days.20 out of 24 were discharged. 2 patients went against medical advice. Two patients died. The outcome of baby is presented in Table 6.

Table 1: Distribution of patients by different characteristics.

Characteristics	No of patients	% of patients
Age groups		
20-24yrs	9	37.50
25-29yrs	10	41.67
30+yrs	5	20.83
Mean ±SD	26.08±3.63	
Parity		
Primigravida	3	12.50
Multi gravida	21	87.50
Location		
Rural	24	100.00
Urban	0	0.00
Registration		
Registered	5	20.83
Unregistered	19	79.17
Total	24	100.00

Table 2: Indications for EPH

Indication	Number of patients	Percentage
Atonic Uterus	19	79.16%
Rupture uterus	3	12.50%
Placenta previa	2	8.33%
Total	24	100

Table 3: Risk factors for EPH

Risk factors	Number of patients	Percentage
Abruption	8	33.33%
Pre eclampsia	4	16.66%
Prolonged labour	4	16.66%
Previous LSCS	3	12.5%
Placenta previa	2	8.33%
Instrumental delivery	2	8.33%
Inversion of uterus	1	4.16%
Total	24	100%

Table 4: Mode of delivery

Mode of delivery	Number of patients	% of patients
Cesarean section	13	54.17%
Vaginal delivery	11	45.83%
Total	24	100%

Table 5: Complications

Complications	Number of patients	% of patients
Acute kidney injury	6	25%
Hypovolumic shock	3	12.5%
Hypertension	2	8.33%
Dissiminated intravascular coagulation	2	8.33%
Postpartum psychosis	1	4.16%
Uterovaginal fistula	1	4.16%
No complication	9	37.5%

Table 6: Outcome of baby

Outcome	Number of Patients	%
Intrauterine death	8	33.33%
Live baby	13	54.16%
Late neonatal death	3	12.5%
Total	24	100%

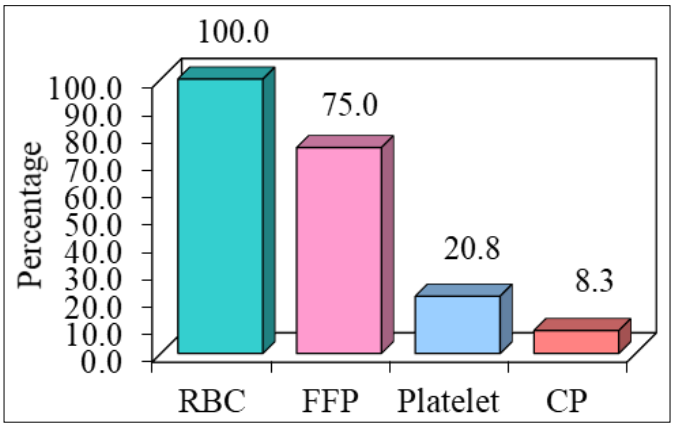

Fig 1: Transfusion of blood products

Discussion

The incidence of EPH ranges from 0.2 to 5 per 1,000 deliveries according to the largest meta-analysis available in the literature so far [4]. However, more recent papers show a reduction of this incidence at least in the more socio-economically developed countries, with a range of 0.4-2.7 per 1,000 deliveries. This figure mainly depends on the healthcare setting and the caesarean delivery rates. Incidence of EPH in

our study is 1.764/1000 births. This is quiet high compared to other studies done by Shetty *et al*. & Rashmi *et al*. [5, 6]. However the incidence rate is bit at lower side when compared to the study conducted in Nigerian population (9.5/1000 births) [7]. The differences in incidence in different place in India is explained by the level of obstetric care offered. The majority of women who had EPH were less than 30 years and mean age is 26.08. This was similar to study done in Nigeria and Anushja *et al*. [7, 8]. In our study majority of patients were multigravida (87.5%) which was quiet similar to study done by Anushja *et al* [8]. In our study all were from rural areas. 79.17% were unregistered which is quiet similar to study done by Anushja *et al*. [8]. Peripartum hemorrhage is truly one of the most menacing life-threatening conditions in obstetrics. The cut-off point at which hysterectomy becomes necessary is subjective and ill-defined. There are no formal guidelines on the stepwise use of conservative measures prior to resorting to hysterectomy or on the absolute trigger for hysterectomy [9]. EPH is performed when all conservative measures have failed to achieve hemostasis in severe post-partum hemorrhage. The common indications for EPH are uterine atony, rupture uterus and placental pathology. Most common indication of EPH in our study is Atonic uterus (79.16%). It is different from study done by Ranjana *et al*, where most common indication is uterine rupture [10]. It is similar to study done by Shetty *et al.* and Anushja *et al*. [5, 8]. In our study 25% patient had Acute kidney injury and undergone dialysis which is different from other studies [5, 8]. Maternal mortality in our study is 8.33% and perinatal mortality is 45.84%. It is similar to study done by Anushja *et al*. [8]. Post-partum hemorrhage is the single most significant cause of maternal death worldwide [9, 11, 12]. EPH will remain the main management of unresolved post-partum hemorrhage.

Conclusion

The incidence of EPH was high in our study. Most common indication is uterine atony. It was more in multigravida and unregistered cases. Along with EPH blood component transfusions and obstetric intensive care were associated with quick recovery. There is need to improve basic and emergency obstetric care at peripheries in order to prevent post-partum hemorrhage and EPH. Regular facility based audits on EPH should be undertaken in tertiary care in order to form institutional protocols on preventive measures.

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