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A Retrospective Study of Peripartum Emergency Hystrerectomy in a Tertiary Care Hospital in Maharashtra

[1]Dr. Nandkishor B. Gaikwad, [2]Dr. Poornima . M , [3]Dr. Mahadev Thorat ,
Associate Professor, Obstetrics & Gynecology department , Government Medical College, Miraj.
, Assistant Professor, Obstetrics & Gynecology department , Government Medical College, Miraj.
Senior Resident , Obstetrics & Gynecology department , Government Medical College, Miraj.

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ABSTRACT: Emergency peripartum hysterectomy (EPH) is an uncommon obstetric procedure, usually performed as a life-saving measure in cases of intractable obstetric hemorrhage . This study was done to determine the frequency, etiological factors or indications, predisposing factors, the maternal and fetal outcome, preventive measures of obstetric hysterectomy. This is a retrospective analytical descriptive study. This study was conducted at a government tertiary care hospital in Maharashtra from October 2015 to September 2019. Medical records of the patients who had undergone emergency hysterectomy between October 2015 and September 2019, in our hospital were reviewed retrospectively. Data collected and tabulated. A total of 31296 deliveries conducted in study period. Amongst these there were 51 cases of peripartum hysterectomy giving rise to a frequency of 1.6/1000 cases. Majority of cases were in the age group of 26-30 years. The majority of cases were from rural areas i.e. 40 (78.45%) . Out of 51 cases 40 were referred (78.4 %).Maternal mortality was seen in 5 cases (9.8%) Though peripartum hysterectomy is a lifesaving procedure in emergency obstetric condition, it represents a painful dilemma for the obstetrician. The decision to perform this operation, especially in primi or in patients with no living children remains a difficult one. So it should be performed judiciously weighing the need to sacrifice the obstetric future of the patient in favour of patient life.

KEYWORDS: Emergency obstetric hysterectomy, Parity, Primi, Hemorrhage.

I. INTRODUCTION

Emergency peripartum hysterectomy (EPH) was first proposed in 1869 but with no desirable results[1.] However, seven years later (1876), the first cesarean subtotal hysterectomy was carried out successfully, with the result that both the mother and the baby survived.[2] In modern obstetrics, the overall incidence of EPH is 0.05%, but there are considerable differences in incidence in different parts of the world, depending on modern obstetric services, standards and awareness of antenatal care, and the effectiveness of family planning activities of a given community.[3] The incidence of peripartum hysterectomy in the literature is reported as 0.24, 0.77, 2.3, and 5.09 per 1,000 deliveries by Sakse et al.[4], Whiteman et al[5]., Bai et al[6] And Zeteroglu et al[7] respectively.

The main causes of the uncontrollable hemorrhage necessitating an EPH have changed since the 1980s[8.] Uterine atony and rupture have been overtaken by abnormal placentation in many studies. This is not only because of improved conservative management of uterine atony and a reduced incidence of uterine rupture due to the extensive use of the lower uterine segment incision in preference to the upper uterine segment incision for cesarean section (CS), but also because of an actual increase in the incidence of the morbidly adherent placenta. Placenta praevia, is thought to be increasing because of the rising rate of CS. Studies have consistently demonstrated that previous CS increases the risk of EPH and abnormal placentation is associated with a previous uterine scar. Other factors that have been associated with EPH include advanced maternal age, multiparity, multiple gestations, and gestational diabetes.[9.]Conservative treatment of postpartum hemorrhage includes uterotonics (oxytocin, ergotamine), uterine massage, uterine artery embolization, uterine packing, pelvic vessel ligation, B-Lynch suture, multiple square sutures, and recombinant-activated factor VII.[10]

The objectives of this study are to examine the frequency, risk factors, indications, outcomes and complications of EPH performed in a tertiary teaching hospital, between October 2015 and September 2019, and to compare the results with other reports in the literature. This would help to highlight the lack of availability and utilization of antenatal services, identify avoidable factors, and

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stress the need to organize health care services so as to improve maternal and fetal outcome.

II. AIM AND OBJECTIVES

1).To determine the frequency of Obstetric Hysterectomy.
2).To determine the etiological factors or indications resulting in Obstetric Hysterectomy.
3).To determine predisposing factors for Obstetric Hysterectomy.
4).To determine the maternal and fetal outcome of the procedure.

III. MATERIAL AND METHODS

This was a retrospective analytical descriptive study. This study was conducted at a government tertiary care hospital in Maharashtra from October 2018 to September 2019.
This study is a case series study. Medical and Pathological records of the patients who had undergone emergency hysterectomy following vaginal or cesarean delivery due to postpartum hemorrhage, between October 2018 and September 2019, in a tertiary teaching hospital, were reviewed retrospectively. Cases were ascertained via a review of the hospital obstetric database and ensured that no cases were missed by also checking operation theatre and pathology records. Information obtained from the medical records included demographic details, previous obstetric history, details of the current pregnancy and delivery, postpartum hemorrhage, indications for peripartum hysterectomy, outcomes of hysterectomy as intraoperative and postoperative complications, length of hospital stay, amount of blood transfused, and neonatal outcomes. Maternal complications such as maternal death and serious hemorrhagic, neurological, urological, infectious, respiratory, renal, and thromboembolic complications were also checked.

Data regarding frequency of EOH, maternal age, parity, booking status, indications for hysterectomy, type of hysterectomy done and its complications, was retrieved from the maintained registers for obstetric hysterectomy for the years.

INCLUSION CRITERIA:
All emergency obstetric hysterectomies done for

- Primary or Secondary PPH,
- Rupture of uterus,
- Adherent placenta or placenta praevia,

EXCLUSION CRITERIA

- Elective hysterectomies performed for an associated gynecologic condition
- Hysterectomies done for early pregnancy complications, like perforated uterus during induced abortion.

IV. OBSERVATIONS AND RESULTS

Table 1: Peripartum hysterectomy in various age groups

Sr. No.	Age groups in years	Number of cases	Percentage
1	16-20	3	5.8
2	21-25	17	33.3
3	26-30	25	49
4	31-35	5	9.8
5	36-40	1	2
	Total	51	100

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Majority of cases were in the age group of 26-30 years i.e. 25 cases constituted 49% of cases.

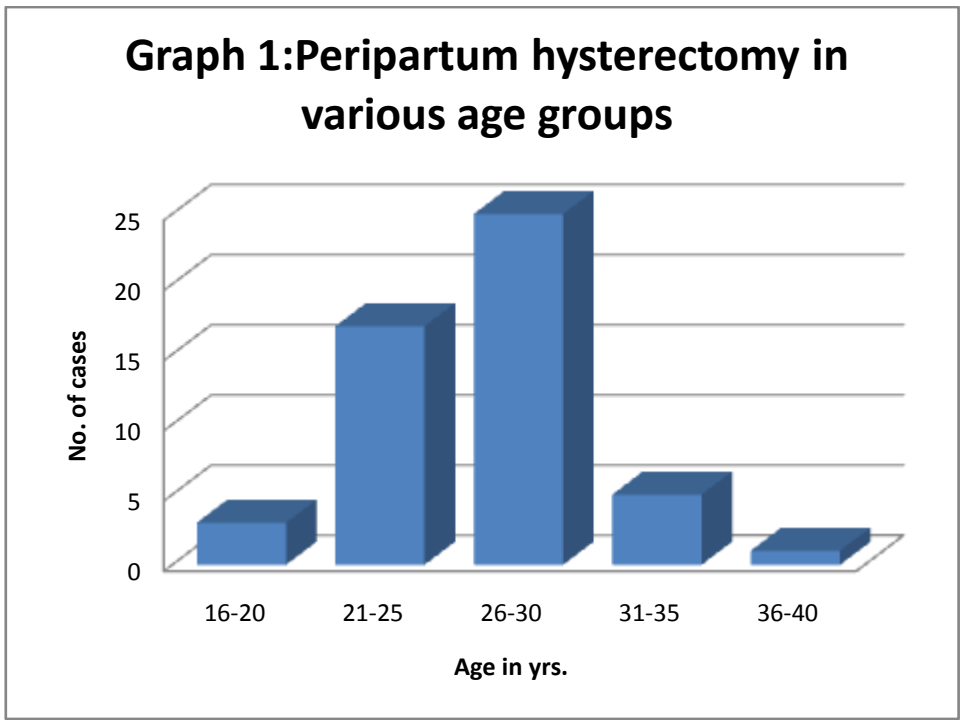

Table 2: Parity

Sr. No.	Gravidity/ Parity	No. of cases	Percentage
1	Multigravida	34	66.7
2	Primipara	9	17.6
3	Grand multi gravida	8	15.7
	Total	51	100

Majority of cases who underwent EPH were multigravida i.e. 34 cases comprising 66.7% cases while 8 were grand multi gravida i.e. 15.7% cases and 9 were primipara i.e.17.6% cases.

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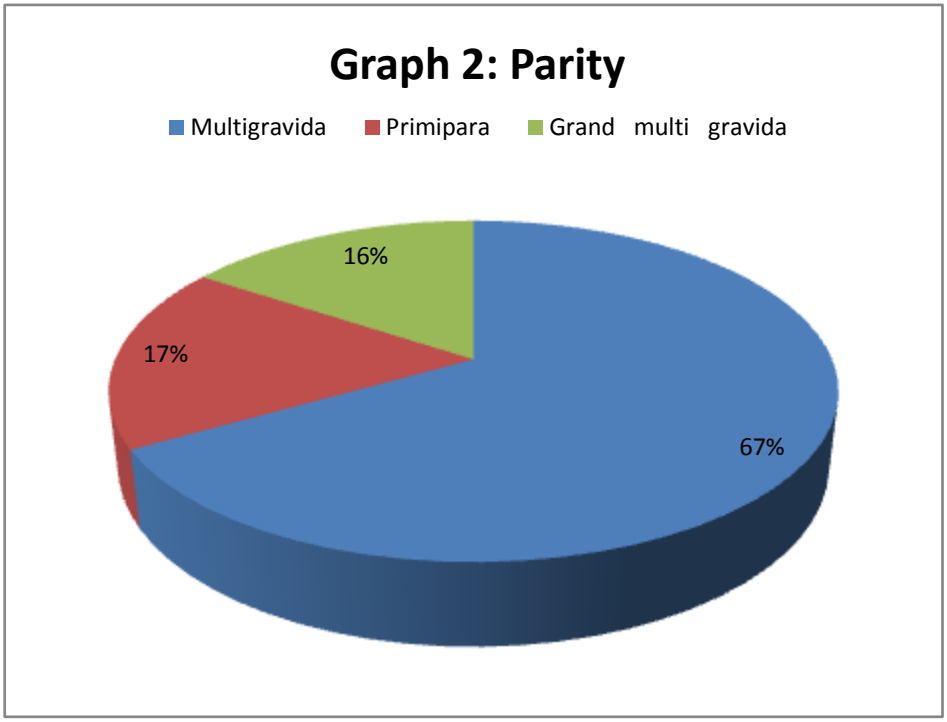

Table 3: Gestational age group

Sr. No.	Gestational age	No. of cases	Percentage
1	Pre-term	6	11.8
2	Term	32	62.7
3	Post delivery	13	25.5
	Total	51	100

The majority of women needed EPH had term pregnancy i.e. 32 cases comprising 62.7% cases while 6 cases i.e. 11.8% cases landed up in EPH after preterm delivery and 13 cases i.e. 25.5% cases were referred after delivery needed EPH.

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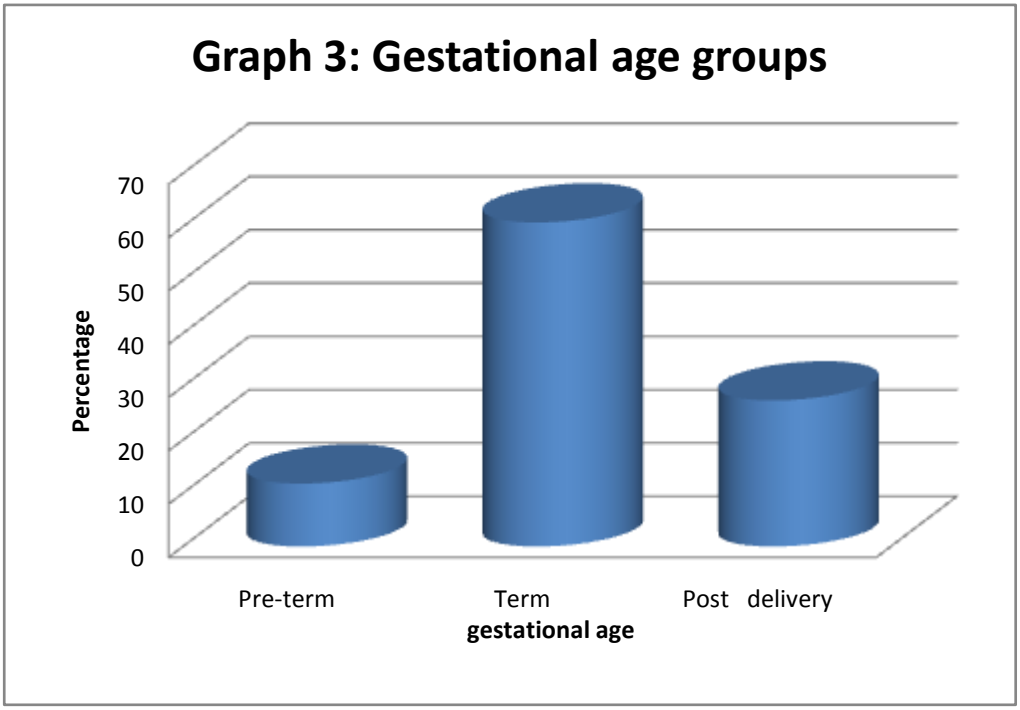

Table 4: ANC Registration

Sr. No.	ANC Registration	No. of cases	Percentage
1	Booked	29	56.8%
2	Unbooked	22	43.2%
	Total	51	100

The cases were booked (having minimum three antenatal visits) in 30 cases i.e. 56.8% cases while 21 cases i.e. 43.2% cases were unbooked.

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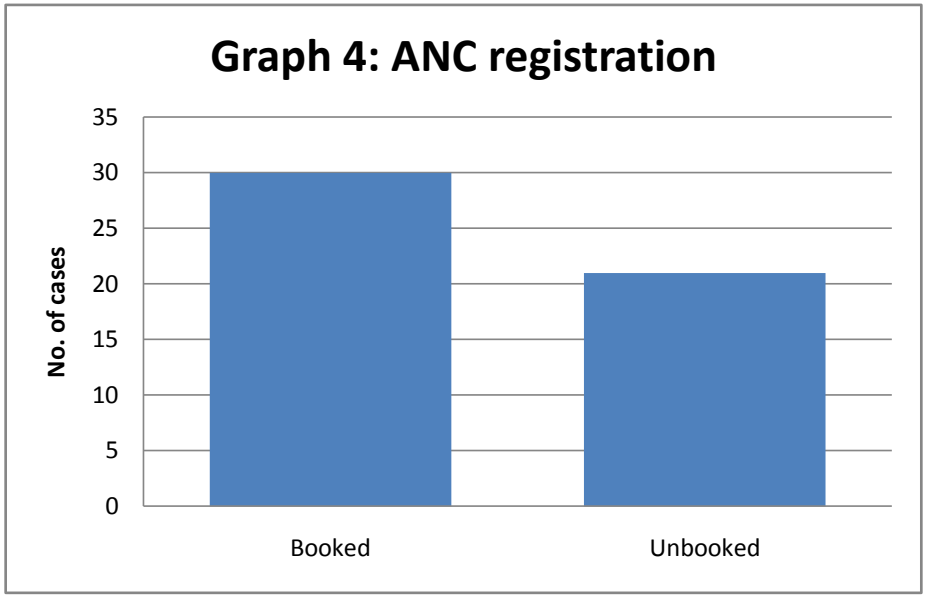

Table 5: Antenatal checkups in booked cases

Sr. No.	Antenatal checkups	No. of cases	Percentage
1	Regular	14	46.7
2	Irregular	16	53.3
	Total	30	100

The antenatal checkups in booked cases were irregular in 16 cases i.e. 53.3% cases and regular in 14 cases i.e. 46.7% cases.

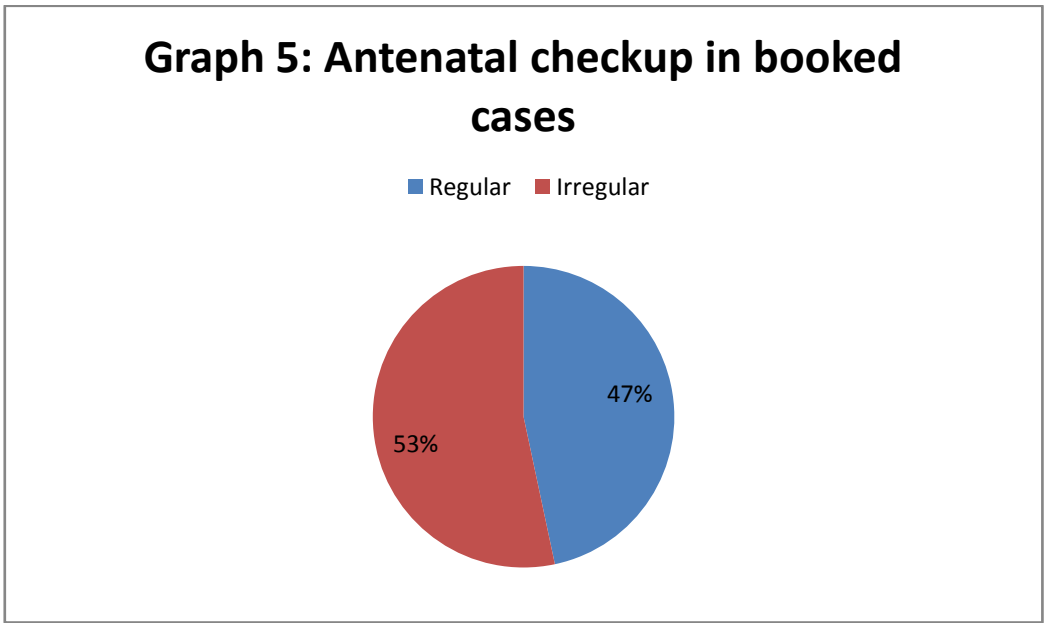

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Table 6: Urban and rural distribution

Sr. No.	Distribution	No. of cases	Percentage
1	Urban	11	21.6
2	Rural	40	78.4
	Total	51	100

The majority of cases were from rural areas i.e. 40 cases constituted 78.45% cases and 11 cases i.e. 21.6% cases were from urban area.

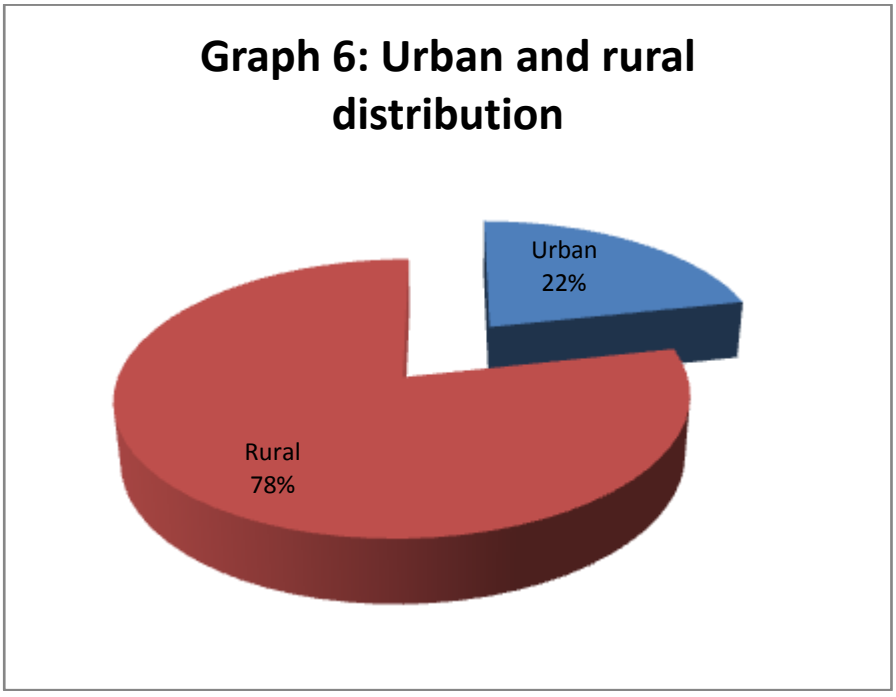

Table 7: Number of referred cases

Status	Number of cases	Percentage
Referred	40	78.4
Direct admission	11	21.6
Total	51	100

The majority of women needed EPH were cases referred from other hospitals i.e. 40 cases comprising 78.4% cases and 11 cases i.e. 21.6% cases were admitted directly.

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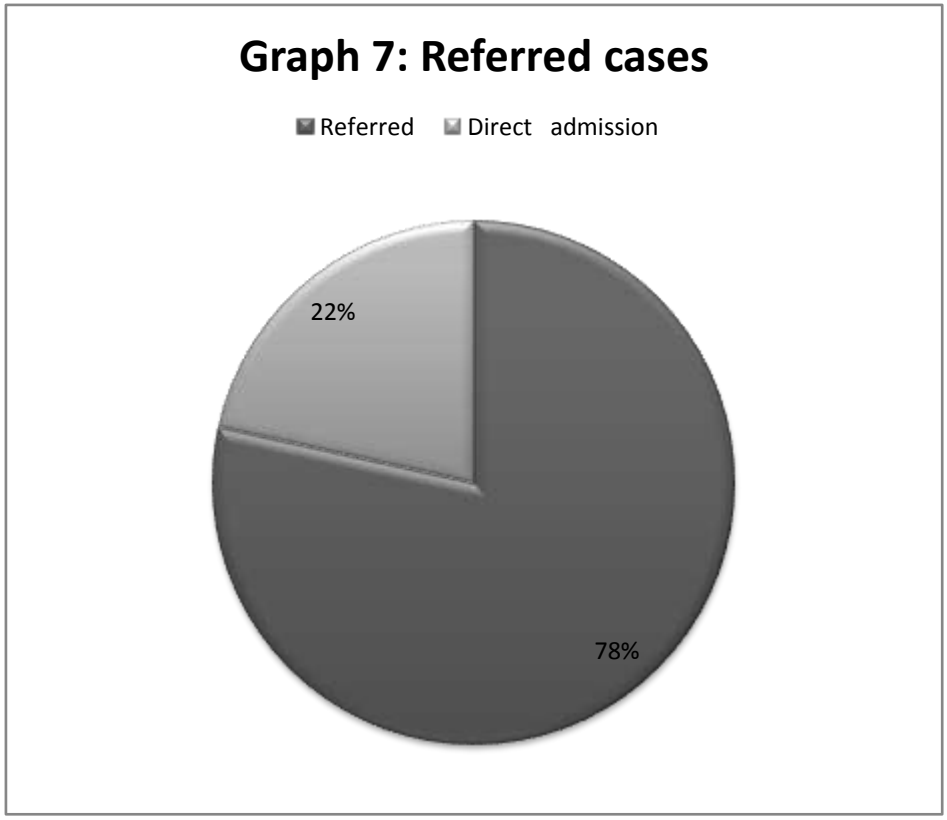

Table 8: Referred Earlier/After delivery

Sr. No.	Clinical complaints	Number of cases	Percentage
1	After delivery	13	32.5
2	Before delivery	27	67.5
	Total	40	100

The majority of referred cases were referred before delivery in 27 cases i.e. 67.5% cases while 13 cases i.e. 32.5% cases were referred after delivery.

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Table 9: Clinical complaints at admission

Sr. No.	Clinical complaints	Number of cases	Percentage
1	Labour pains	14	27.5
2	Vaginal bleeding	27	52.9
3	Decreased fetal movements	3	5.9
4	Leaking PV	4	7.8
5	Postdate	3	5.9
	Total	51	100

Majority of patients were presented with vaginal bleeding in 27 cases i.e. 52.9% cases. 14 cases i.e. 27.5% cases presented with labour pains while 3 cases i.e. 5.9% cases presented with complaints of decreased fetal movements and 4 cases i.e. 7.8% cases were complained of leaking PV.

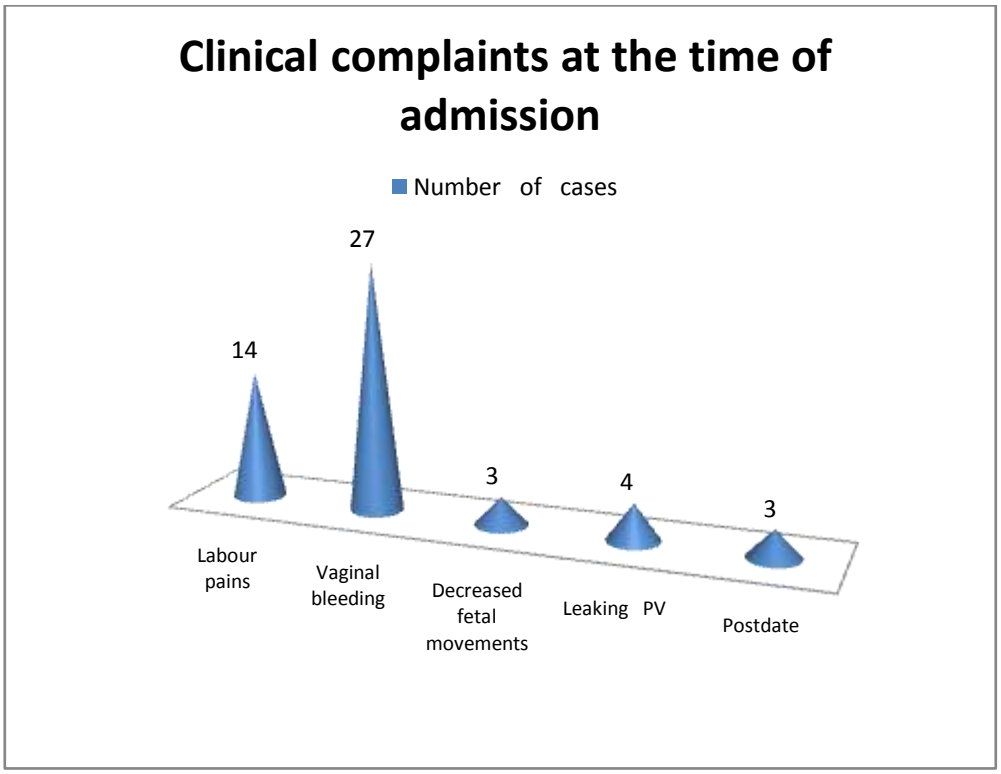

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Table 10: Number of previous LSCS

Sr. No.	No. of previous LSCS	Number of cases	Percentage
1	One	20	71.42
2	Two	8	28.58
	Total	28	100

Totally 26 i.e. 54.9% cases had previous LSCS, of which majority had one previous LSCS in 20 cases i.e. 71.42% cases and two LSCS in 8 cases i.e. 28.58% cases.

Table 11: Previous dilatation and curettage

Sr. No.	Previous D&C	Number of cases	Percentage
1	Total	4	7.8

Previous history of D&C noted in 4 cases (7.8%)

Table 12: Induction and augmentation

Sr. No.	Labour management	Number of cases	Percentage
1	Induction	8	53.3
2	Augmentation	7	46.7
	Total	15	100

Of the total 51 patients , induction and augmentation was done in 15 cases i.e. 29.4% cases, induction was done in 8 cases i.e. 53.3% cases and augmentation in 7 cases i.e. 46.7% cases.

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Table 13: Mode of delivery

Sr. No.	Mode of delivery	Number of cases	Percentage
1	Emergency LSCS	20	39.23
2	Laparotomy	10(8 prev lscs +2 normal)	19.60
1	FTVD	19	37.25
2	Instrumental delivery	2	3.92
	Total	**51**	**100**

Majority of cases were delivered by LSCS 20 cases i.e. 39.23% and 19 cases i.e.37.25% were delivered vaginally, .laparatomy for rupture uterus was done in 10 patients (19.60%), 2 cases i.e. 3.92% cases were delivered by instrumental delivery (1 case by ventouse and 1 case by forceps)

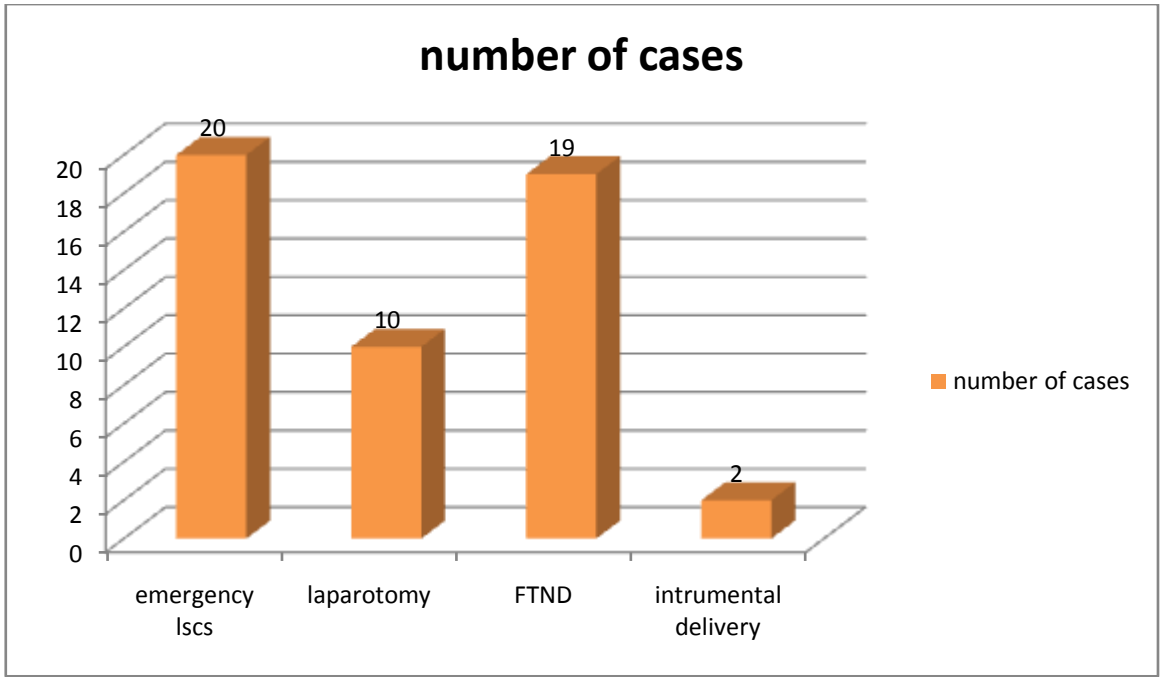

Table 14:- RUPTURE UTERUS

Scarred uterus	**8**
Unscarred uterus	**2**
Total Cases	**10**

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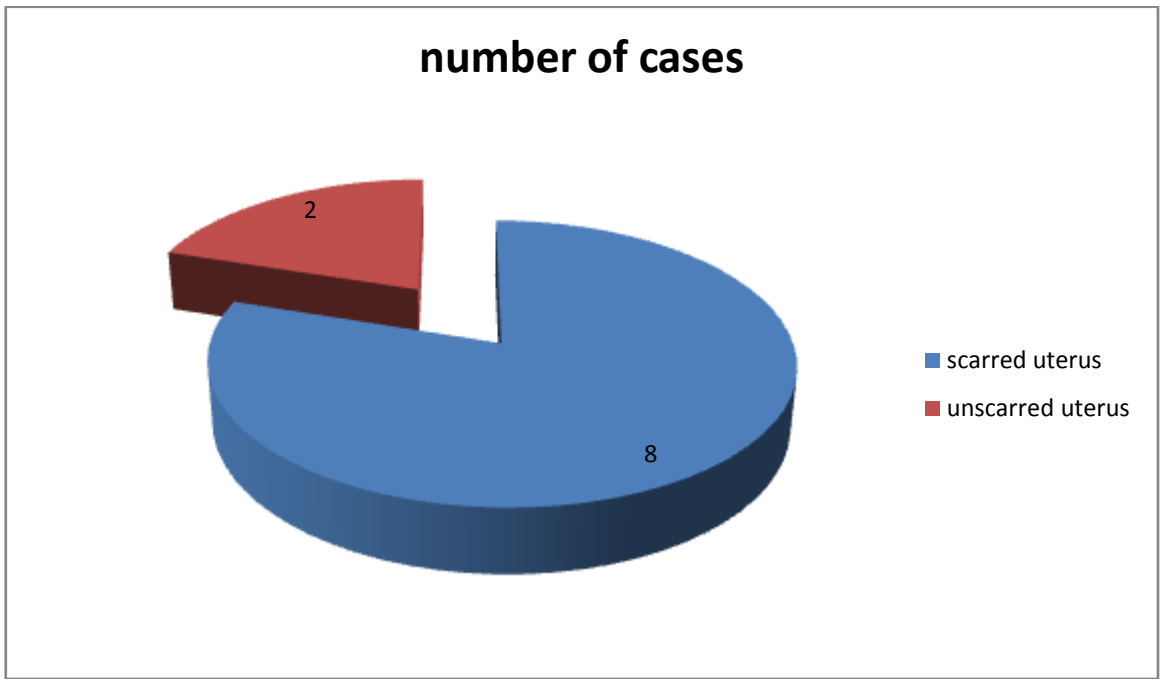

Table 15: –Etiology of Rupture Uterus

	Rupture uterus	Number of cases	Percentage
1	Spontaneous	2	20
2	Labour induction with PGE2 gel	2	20
3	Labour acceleration with oxytocin	1	10
4	Spontaneous rupture on scarred uterus	5	50
	Total	10	100

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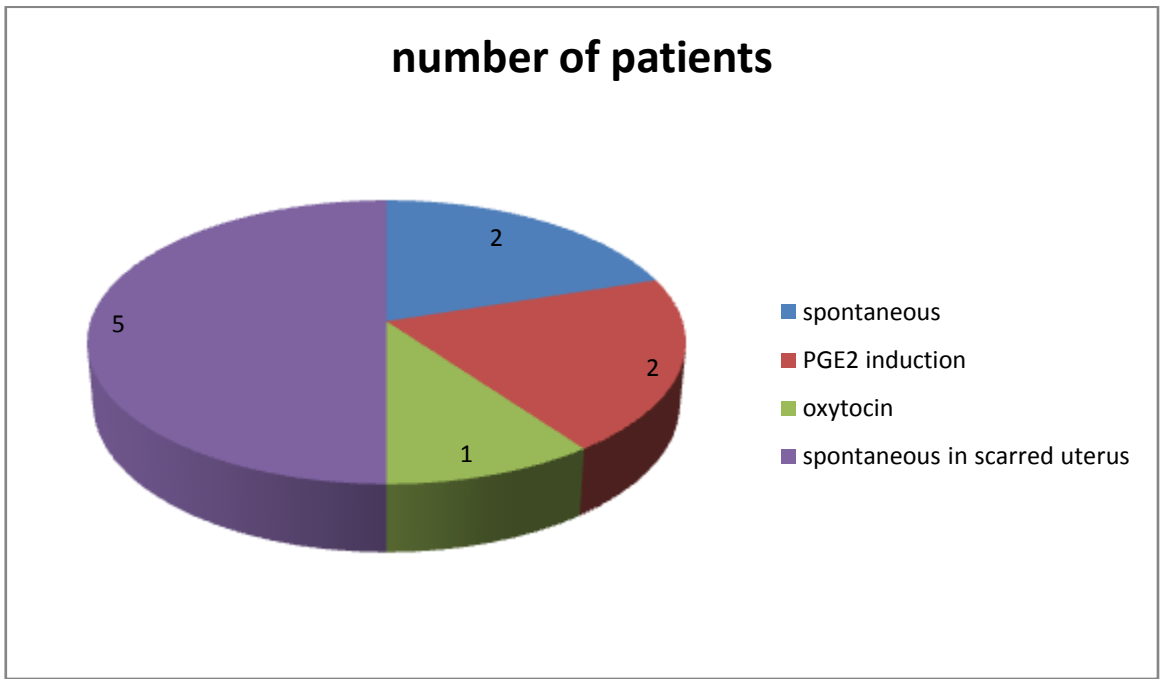

Table 16: Indication for LSCS

Sr. No.	Indication	Number of cases	Percentage
1	2nd stage arrest	**3**	**15**
2	Abruptio Placenta	**4**	**20**
3	Failure to Progress	**2**	**10**
5	Deep transverse arrest	**2**	**10**
8	Placenta Praevia	**7**	**35**
9	Prev. 2 LSCS	**2**	**10**
	Total	**20**	**100**

Most common indication for LSCS was placenta praevia in 7 cases i.e. 35 % cases, followed by abruption placenta in 4 cases i.e. 20% cases.

Table 17: Fetal condition

Sr. No.		Number of cases	Percentage
1	Still birth	**15**	**29.5**
2	Good condition	**36**	**71.5**
	Total	**51**	**100**

Fetal condition was good in 36 cases i.e. 71.5% cases and still birth occurred in 15 cases i.e. 29.5% cases.

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Table 18: Postpartum hemorrhage (PPH)

Sr. No.	PPH	No. of cases	Percentage
1	Atonic	**23**	**45.1**
2	Atonic and traumatic PPH	**2**	**3.9**
3	Atonic and morbidly adherent placenta	**1**	**2**
	Total	**26**	**100**

We observed that 26 cases had postpartum hemorrhage i.e. 50.9% cases of which atonic PPH was seen in 23 cases i.e. 45.1% cases, atonic and traumatic PPH was seen in 2 cases i.e. 3.9% cases and atonic PPH with morbidly adherent placenta was observed in 1 case i.e. 2% cases.

Table 19: Medical Management given atonic Postpartum hemorrhage

Management	No of cases	Percentage
Inj. carboprost + Inj. Oxytocin	**15**	**65.3**
Inj. carboprost	**5**	**21.7**
Inj. carboprost + Inj. Oxytocin + Inj. Methergin	**3**	**13**
total	**23**	**100**

All 23 cases of atonic PPH were managed medically. Inj. Carboprost and inj. oxytocin was used in 15 cases i.e. 65.3% cases, inj. Carboprost was used in 5 cases i.e. 21.7% cases and inj. Carboprost + inj. Oxytocin + inj. Methergine was used in 3 cases i.e. 13% cases.

Table 20: Salvage procedures tried for PPH before peripartum hysterectomy

Method	No. of cases	Percentage
Uterine artery ligation	**6**	**30**
Uterine artery + ovarian artery ligation	**2**	**10**
B- Lynch suture application	**1**	**0.5**
Cho sutures	**1**	**0.5**
Uterine artery ligation + B-Lynch	**5**	**25**
Internal iliac artery ligation + B-Lynch	**5**	**25**
Total	**20**	**100**

Salvage procedures were tried in 20 cases i.e. in 39.2% cases, in which uterine artery ligation was tried in 6 cases i.e.30% cases, uterine artery + ovarian artery was tried in 2 cases i.e. 10% cases, B- Lynch suture was taken in 1 case i.e. 5% cases, Cho sutures were taken in 1 case i.e. 5% cases, uterine artery + B- Lynch was tried in 5 cases i.e.

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25% cases and internal iliac artery ligation + B-Lynch suture in 5 cases i.e. 25% cases. Failure of these salvage procedures in these cases landed up in EPH.

Table 21: Indication for peripartum hysterectomy

Indication	No of cases	Percentage
Atonic PPH	**23**	**45.09**
Morbidly adherent placentae/ Placenta Praevia/ increta / accreta / Percreta with PPH	**12**	**23.52**
Rupture uterus	**10**	**19.60**
Traumatic PPH + Atonic PPH	**2**	**3.92**
Broad ligament hematoma	**3**	**5.88**
Posterior uterine wall tear	**1**	**1.96**
Total	**51**	**100**

Most common indication was atonic PPH in 23 cases i.e. 45.09% cases. Second most common indication was abnormal placentation in 12 cases i.e. 23.5% cases followed by ruptured uterus with 10 cases i.e. 19.6% cases. traumatic + atonic PPH was noted in 2 case i.e. 3.92% cases, broad ligament hematoma in 3 patients(5.88%) .

Table 22: Mean blood transfusion

Blood transfusion (no. of pints)	No of cases	Percentage
1-3	**18**	**35.30**
4-6	**28**	**54.90**
6-11	**5**	**9.80**
Total	**51**	**100**

Mean blood transfusion was 4-6 pints of blood in 28 cases i.e. 54.90% cases.

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Table 23: Intraoperative complications

	No of cases	Percentage
Bladder injury	**6**	**11.76**

Intraoperative complications noted in 6 cases i.e. 11.76% cases in the form of bladder injury.

Table 24: Postoperative complications

	No of cases	Percentage
Wound dehiscence	**5**	**21.73**
DIC(disseminated intravascular coagulation)	**4**	**17.39**
UTI(urinary tract infection)	**3**	**13.04**
ARF(acute renal failure)	**4**	**17.39**
Postoperative fever	**5**	**21.73**
Hypovolemic shock	**1**	**4.34**
ARF + DIC	**1**	**4.34**
Total	**23**	**100**

Most common post operative complication were post op fever and wound dehiscence 5(21.73%), 4 (17.39%)patients had acute renal failure and 4(17.39%) patients had DIC, 3 (13.04%)patients had urinary tract infection, one(4.34%) pt had ARF+DIC and hypovolemic shock each .

Table 25: Subtotal / Total peripartum hysterectomy

	No of cases	Percentage
Subtotal hysterectomy	**25**	**49.0**
Total hysterectomy	**26**	**51**
Total	**51**	**100**

Subtotal hysterectomy was done in 25 cases i.e. 49% cases and total hysterectomy was done in 26 cases i.e.51% cases.

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Table 26: Relaparotomy

	No of cases	Percentage
Relaparotomy with vault bleeder ligation	**1**	**2**

Relaparotomy followed by vault bleeder ligation was done in 1 case i.e. 2% cases.

Table 27: Cause of maternal mortality

	No of cases	Percentage
DIC	**4**	**80**
DIC + ARF	**1**	**20**
Total	**5**	**100**

Total maternal mortality was seen in 5 cases i.e. 9.8% cases of which 4 women died due to DIC i.e. 80% of mortality cases while one woman died due to DIC + ARF i.e. 20% of mortality cases.

V. DISCUSSION

Peripartum hysterectomy in various age groups:

In our study majority were in the age group of 26-30 years i.e. 25 cases comprising 49% cases. Comparable to Jindal et al[11] where majority were in the age group of 26-30 years i.e. 53% whereas Marhawaparveen et al[12] incidence of 70% in age group of 26-35 years.

Peripartum hysterectomy in parity:

Our study had maximum number of cases who underwent EPH were multigravida i.e. 34 cases comprising 66.7% cases while 8 were grand multi gravida i.e. 15.7% cases and 9 were primipara i.e.17.6% cases.

Comparable to below study,

Our study	multi	66.7%
Kant A. Wadhawani [13]	multi	60.9%
Kastner et al[14]	multi	72.3%

Various gestational age groups:

Our study had majority of women needed EPH had term pregnancy i.e. 32 cases comprising 62.7% cases while 6 cases i.e. 11.8% cases landed up in EPH after preterm delivery and 13 cases i.e. 25.5% cases were referred after delivery needed EPH.Comparable to study by Kastner et al.[15] where mean gestational age needed EPH was 37.8 ± 3.8 weeks.

ANC registration:

Out of 51 cases 29 cases i.e.56.8% cases were booked while 22 cases i.e. 43.2% cases were unbooked. Compared to Jindal etal[16] (47%) and Marhawaparveen[17] et al (60%) where ANC registration was found to be poor.

Urban and rural distribution:

The majority of cases were from rural area 40 cases i.e. 78.4% cases and few are from urban 11 cases i.e. 21.6% cases. This observation reveals the gross disparity between the availability of medical facilities in rural and urban areas. The obvious reason might be that availability of adequate medical facilities, both public and private are not available or are not properly utilized by rural women. This distribution is comparable to Jindal etal[18] where 60% cases were from rural area.

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Referred cases:

Out of 51 cases 40 were referred i.e. 78.4 % cases and 11 cases i.e. 21.6% cases were direct admission.

The majority of referred cases were referred before delivery i.e. 27 cases comprising 67.5% cases while 13 cases i.e. 32.5% cases were referred after delivery.

Being a major referral center in the area our hospital had majority of referred cases.

Reason for referral includes nonavailability of obstetrician, anesthetist, pediatrician, lack of facilities to do caesarean section, lack of blood bank services to manage obstetric emergencies at district hospitals and peripheral health centres.

Number of previous LSCS:

Out of 51 cases 28 patients had previous LSCS i.e.54.9% cases indicated that increasing LSCS is one of the major risk factor.

Previous LSCS shows definite risk factor. Increase in cesarean section and concomitant rise in rupture uterus and abnormal placenta further leading to emergency peripartum hysterectomy.

Multiple pregnancy:

Risk factor of multiple pregnancy in our study was seen in one case i.e. 1.9% cases. According to Francois et al[19] (2005), those who delivered twins were 3 times likely to go to emergency peripartum hysterectomy and in triplets and quadruplets risk was 24 times.

Induction and augmentation:

Totally induction and augmentation was done in 15 cases. induction was done in 8 cases i.e. 53.3% cases and augmentation in 7 cases i.e. 46.7% cases. Out of 8 induced cases 1 had ruptured uterus, 5 had atonic PPH and 2 had adherent placenta.

According to Jindal etal[20] 1 in 6 induced cases will have emergency peripartum hysterectomy.

Common indications of LSCS:

There were 20 cases of LSCS, the most common cause was placenta praevia 7 cases leading to peripartum hysterectomy comparable to Jindal et al[21] which was 17%, followed by abruptio placenta 4 cases i.e. 7.8% cases comparable with Jindal et al[22] (2008).

Out of 20 cases of LSCS 4 were patients with LSCS done in other hospitals and referred for PPH.

Mode of delivery:

Emergency LSCS was the most common mode of delivery in our study with 20 cases constituting 39.23%, vaginal delivery 19 cases constituting 37.25% and delivery by emergency exploratory laparotomy constituted 19.6% (10cases). According to Jindal et al[23] laparotomy was done in 26.6%

A total no. of caesarian section performed in study period were11512 so the incidence of peripartum hysterectomy in caesarian section was 0.24%.

A total no. of vaginal deliveries was 19784 and peripartum hysterectomies in vaginal deliveries were 12 cases with incidence of 0.06%.

Comparing with other studies:

Study	Incidence in vaginal deliveries	Incidence in caesarian deliveries
Our study	0.06%	0.24%
Praneshwari Devi et al[24](2004)	0.01%	0.39%
Pawar[25] et.al (1998),	0.03%	0.45%
Gupta [26] et.al(2001),	0.26%	1.5%
Jindal[27] et.al,	0.15%	0.42%

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Postpartum hemorrhage:26 cases had postpartum hemorrhage. 23 cases had atonic PPH i.e. 45.1% cases, 2 cases had atonic and traumatic PPH i.e. 3.9% cases and 1 case had atonic PPH with morbidly adherent placenta i.e. 2% cases. All cases were managed medically, but medical management failed. Out of 26 cases of PPH in 20 cases various salvage procedures i.e. uterine artery ligation, ovarian artery ligation, B-Lynch suture, cho sutures, internal iliac artery ligation or various combinations of these were tried.

Indication for peripartum hysterectomy:
Most common indication was atonic PPH in 23 cases i.e.45.09% cases.

Indication	No. of cases	Percentage	Comparing to other study
Atonic PPH	23	45.09%	Mcknight[28](2007) 47%
Ruptured uterus	10	19.6%	Mc knight[29](2007) 19%
Abnormal placentation i.e., Placenta praevia/ accreta/ percreta/ morbidly adherent placenta	12	23.5%	Praneshwari Devi et al[30] (2004) 26.9%%

Average blood transfusion:
Blood and blood products are liberally used in all cases.
Blood transfusion was done in 100% of cases which can be compared to Nusrat etal[31](100%), Glaze etal[32] (1999-2006) (86%), Lovina SM[33] (2011) (88%) and Anne Kwee[34](2005) (67%).
Mean blood transfusion is 4-6 unit of blood in 28 cases i.e. (55%) 4.52±1.89 (range 1-11).Average blood transfusion is 4-6 units mainly packed cells and whole blood range (1-11 units). According to Kastner et al[35], median blood transfused is 4 units with range of 0-4 units while in A.Kwee[36] study 29.2% cases received more than 10 units. According to Parathamukherjee[37] 2-5 units were required in most of the cases. According to Glaze et.al[38] mean no. of units required was 10 units with range of 1-52 units. According to Marhawaparveen[39] blood transfusion ranged from 3-11 units.

Type of hysterectomy:
No significant difference in type of hysterectomy was noted in our study. Both total and subtotal hysterectomy done equally, similar to the study of Mc.Knight.[40]
Total hysterectomy is the recommended surgical method of EPH due to the potential risk of malignancy developing in the cervical stump and the need for regular cytology and other associated problems such as bleeding or discharge associated with the residual cervical stump. The advantage of subtotal hysterectomy report a lesser blood loss, a reduced need for blood transfusion, reduced operating time and reduced intra and postoperative complications

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According to Marhawaparveen[41] (2008) and J Ayub medical college (2012)[42] subtotal hysterectomy was done in 96.6% cases and 89.9% cases respectively.

DIC:
DIC occurred in 4 cases giving incidence of 7.8 % compared to Nusratetal[43] (2009) (14.3%), Marhawaparveen[44] (3.3%), Salil Bhakshi[45] (2.5%) and highest was in King Abudalaziz[46] (53%).

Relaparotomy:
Relaparotomy was done in 1 case i.e. 2% cases for suspected post-operative collection who had bleeding from vault, attained hemostasis by ligation of bleeder from vault and had satisfactory outcome.According to M.K.Knight[47] 20% cases and Anne kwee[48] 25% cases had relaparotomy.

Perinatal outcome:
Fetal demise (including still birth and neonatal death) occurred in 15 cases i.e. 29.5% cases out of which 1 died after 12 days and 1 after 3 days. 36 babies' i.e.71.5% cases were in good condition. Fetal outcome can be compared to Dr Jeff Kambale Mathe[49] with fetal demise in 35.5% other studies marhawaparveen[50] 60% and Jindal et al[51]9%.
Fresh still born were seen in 12 case i.e. 21.9% cases, compared to Marhawaparveen[52] where it was noted in 60% cases and according to Jindal et al[53] it was seen in 9% cases. Most common cause for still born was abruptio placentae and rupture uterus.

Maternal mortality:
Maternal mortality was seen in 5 cases i.e. 9.8% cases.
Comparing with other study,

Name of study	Maternal mortality (%)
Pawar[54] et.al (1998),	10
Sahu[55] et.al (2004),	5.5
Gupta [56] et.al (2001)	10.9
Kore[57] et.al (2001),	11.1
Jindal[58] et.al,	10
Anne kwee[59] et.al (2005)	4
Praneswhari Devi et al[60] (2004)	No maternal mortality
Glaze et al.[61]	No maternal mortality

Out of 5 cases 4 cases were referred, one was outside LSCS in shock, which was a late referral and patient had DIC and died after 12 hrs. of ventilator support. Two cases were again referred for retained placenta in shock with very severe anemia and retained placenta with traumatic PPH who died after 6 hours and 8 hrs. on ventilator support due to DIC. Fourth was late referral for atonic PPH with severe anemia who died after 14 hours on ventilator support due to DIC + ARF. Fifth was a case of previous LSCS with IUD, who was induced with Tb. Misoprostol, but there was rupture uterus and she died after 22 hrs. due to DIC.

VI. CONCLUSION

Though peripartum hysterectomy is a lifesaving procedure in emergency obstetric condition, it represents a painful dilemma for the obstetrician. The decision to perform this operation, especially in primi or in patients with no living children remains a difficult one. So it should be performed judiciously weighing the need to sacrifice the obstetric future of the patient in favour of patient life.

Although no risk assessment system can predict all instances where cesarean delivery will be needed, a significant percentage of the patients who are at high risk for severe hemorrhage and the subsequent need of emergency hysterectomy can be identified before surgery. The preoperative risk factors include previous history of CS, placenta praevia and accreta. The presence of preoperative risk factors should facilitate consultation, referral or transfer of patients before surgery to a tertiary care facility. Due to the complexity of the surgery and decision making, the involvement of an experienced obstetrician at an early stage is desirable. Proper surgical measures such as hemostatic sutures or uterine or hypogastric artery ligation or embolization are options in attempting uterine conservation particularly in patients who are young and in whom future fertility is important and who are relatively haemodynamically stable. When conservative treatment is not feasible or has failed, prompt EPH is performed failing which the delay would contribute to the maternal morbidity and in unfortunate cases mortality.

Special provision of blood transfusion facilities, dialysis facilities, and goodventilator support is necessary round the clock.

Availability of obstetrician, anesthetist, neonatologist, physician and surgical services round the clock is necessary.

Availability of communication and transport facilities for these emergency patients are required.

Availability of flying squad services for obstetric emergency cases. Provision of emergency ambulance facility services provided by the Government has played a huge role in quicker access for health care facilities. Further such measures will help in reducing maternal and perinatal morbidity and mortality in emergency peripartum hysterectomy.

Training of obstetrician in emergency peripartum hysterectomy is very much necessary to reduce morbidity and mortality.

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