

# To Determine the Frequency of Indication of Emergency Peripartum Hysterectomy

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## ABSTRACT

**Introduction:** Peripartum or Emergency obstetric hysterectomy is defined as hysterectomy performed within 24 hours of a delivery. It includes both postpartum and cesarean hysterectomy. It is a life saving procedure although it is opted as a desperate attempt when all measures fail to control catastrophic hemorrhage from placental bed in placenta previa or morbid adherence of placenta or due to uterine atony. Common indications for emergency peripartum hysterectomy include uterine rupture and uterine atony.

### Objective:

- To determine the frequency of various indications of emergency peripartum hysterectomy in a tertiary care hospital

### Study Setting:

- Obstetrics and Gynaecology department, Sir Ganga Ram Hospital, Lahore

### Study Design:

- Cross sectional study

### Study Duration:

- One Year

From:01-01-2015to31-12-2015

**Material & Methods:** A total of 45 cases between 20 – 40 years, and gestational age >25 week to 40 week assessed by ultrasound with primary post partum haemorrhage with singleton pregnancy on ultrasound were included in the study through emergency department in Sir Ganga Ram Hospital Lahore, while Peripartum hysterectomy due to cancer and patients having coagulopathy due to liver disease or bleeding disorder diagnosed with history and investigation (bleeding time, Clotting time, Platelet count, prothrombin time/activated partial thromboplastin time) were excluded. All data of patients was entered on pre-designed proforma. Procedure was performed by consultant obstetrician after taking written informed consent and different indications of peripartum hysterectomy were entered in proforma. The indications of hysterectomy i.e. rupture of uterus, uterine atony and morbidly adherent placenta were recorded.

**Conclusion:** We concluded that rupture of uterus and uterine atony are the common indications of peripartum hysterectomy followed by morbidly adherent placenta in patients coming to our hospital. These results are helpful for obstetricians while dealing with this morbidity.

**Key words:** Determine the frequency of various indications of emergency peripartum hysterectomy in a tertiary care hospital

## INTRODUCTION

Emergency Peripartum Hysterectomy (EPH) is a life-saving surgical procedure that is associated with maternal morbidity and mortality, especially in developing countries.<sup>1</sup> Emergency peripartum hysterectomy (EPH) is defined as a hysterectomy carried out for hemorrhage unresponsive to conservative treatment within 24 hour of delivery.<sup>2</sup> Most common indication for emergency peripartum hysterectomy is uterine atony and uterine rupture but recently the most common reported indication

is placenta accrete, and is most likely related to increase in number of cesarean deliveries observed over the past two decades.<sup>3</sup> There are difficulties and complications associated with this procedure, not only due to the surgical technique, but also to the pre-, per-, and post-operation support needed for the patient. In poor settings, like in developing countries, as the condition arises as emergency, these preparations are not ready or adequate, hence putting the patient in potential danger.<sup>4</sup> Life-threatening hemorrhage resulting from uterine rupture and atony has become

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uncommon in the developed world but they continue to pose a major problem in obstetric care in developing countries.<sup>5</sup> Common risk factors for peripartum hysterectomy include current cesarean birth, previous cesarean birth, abnormal placentation and multiparity.<sup>6</sup>

According to World Health Organization (WHO), Postpartum hemorrhage causes 25% of maternal deaths. In Pakistan, postpartum hemorrhage is the most common cause of maternal mortality<sup>7</sup> s.

Majority (55%) of cesarean hysterectomies are being done for postpartum hemorrhage (PPH), caused by uterine atony in 2/3<sup>rd</sup> of the cases. Ruptured uterus is the second most common indications of Emergency Obstetric Haemorrhage (EOH), 60% women undergoing the procedure had a previous history of Caesarean delivery. Placental disorders are the third most frequent cause of EOH, most common being placenta accreta, with or without an associated previa. Women with neglected infections leading to myometrial abscesses or intractable uterine atony, requiring emergency hysterectomy are few now-a-days because of modern anti-microbial therapy.<sup>1,8</sup>

### OBJECTIVE

- To determine the frequency of various indications of emergency peripartum hysterectomy in a tertiary care hospital.

### MATERIAL AND METHODS

#### Study Setting:

- Obs and Gynae department, Sir Ganga Ram Hospital, Lahore

#### Study Design:

- Cross sectional study

#### Study Duration:

- One Year  
From:01-01-2015to31-12-2015

#### Sample Size:

- A sample size of 45 is calculated for the study with the expected rate of 20% emergency peripartum hysterectomy in Ganga Ram Hospital with 12% margin of error, 95% level of confidence.

#### Sampling Techniques:

- Non-probability consecutive sampling

#### Data Collection Procedure:

All patients presenting through emergency department in Sir Ganga Ram Hospital Lahore undergoing emergency peripartum hysterectomy fulfilling inclusion criteria were included in study. All data of patients was entered on pre-designed

proforma. Procedure was performed by consultant obstetrician after taking written informed consent and different indications of peripartum hysterectomy were entered in performa.

### DATA ANALYSIS PROCEDURE:

All data was entered in SPSS version 19. Mean and standard deviation was calculated for quantitative variables i.e. age of patient and gestational age. Frequencies and percentage of qualitative variables like ruptured uterus, uterine atony and morbidly adherent placenta was calculated. The data was stratified for age and parity, mode of delivery and booking status of the patients. P value equal to or less than 0.05 was considered as significant after applying chi square test post stratification.

### RESULTS

- A total of 45 cases fulfilling the inclusion/exclusion criteria were enrolled to determine the frequency of various indications of emergency peripartum hysterectomy in a tertiary care hospital.
- Age distribution of the patients was done showing that 37.78%(n=17) were between 20-30 years of age while 62.22%(n=28) were between 31-40 years of age, mean±sd was calculated as 31.67±4.67 years. (Table No. 1)
- Gestational age of the patients was calculated as 68.89%(n=31) were between 26-37 weeks while 31.11%(n=14) were between 38-40 weeks, mean±sd was calculated as 33.6±4.76 weeks. (Table No. 2)
- Parity of the patients was recorded as 35.56%(n=16) between 1-3 while 64.44%(n=29) had >3 para. (Table No. 3)
- Mode of delivery of the patients was calculated as 55.56%(n=25) for cesarean delivery while 44.44%(n=20) were delivered vaginally. (Table No. 4)
- Booking status of the subjects shows that 37.78%(n=17) were booked while 62.22%(n=28) were unbooked. (Table No. 5)
- Frequency of indications of emergency peripartum hysterectomy was recorded showing that 42.22% (n=19) had rupture of uterus, 28.89%(n=13) had uterine atony, 20%(n=9) had morbidly adherent placenta while 8.89%(n=4) had other indications of hysterectomy. (Table No. 6)
- The data was stratified for age, gestational age, parity, booking status of the patients and mode of delivery was calculated and presented in Table No. 7-11 respectively.

**Table 1:** Age Distribution (n=45)

Age(in years)	No. of patients	%
20-30	17	37.78
31-40	28	62.22
<b>Total</b>	<b>45</b>	<b>100</b>
<b>mean±sd</b>	<b>31.67±4.67</b>	

**Table 2:** Gestational Age (n=45)

Gestational Age (in weeks)	No. of patients	%
26-37	31	68.89
38-40	14	31.11
<b>Total</b>	<b>45</b>	<b>100</b>
<b>mean±sd</b>	<b>33.6±4.76</b>	

**Table 3:** Parity Distribution (n=45)

Parity	No. of patients	%
1-3	16	35.56
>3	29	64.44
<b>Total</b>	<b>45</b>	<b>100</b>

**Table 4:** Frequency of Mode of Delivery(n=45)

Mode of delivery	No. of patients	%
Cesarean delivery	25	55.56
Vaginal Delivery	20	44.44
<b>Total</b>	<b>45</b>	<b>100</b>

**Table 5:** Booking Status of The Subjects(n=45)

Booking status	No. of patients	%
Booked	17	37.78
Unbooked	28	62.22
<b>Total</b>	<b>45</b>	<b>100</b>

**Table 6:** Frequency of Indications of Emergency Peripartum Hysterectomy (n=45)

Indications	No. of patients	%
Rupture of uterus	19	42.22
Uterine atony	13	28.89
Morbidly adherent placenta	9	20
Others	4	8.89
<b>Total</b>	<b>45</b>	<b>100</b>

**Table 7:** Stratification For Frequency Of Indications Of Emergency Peripartum Hysterectomy With Regard To Age**Morbidly Adherent Placenta:**

Age(in years)	n=9		P value
	Yes	No	
20-30	1	16	0.12
31-40	8	20	

**Uterine Atony:**

Age(in years)	n=13		P value
	Yes	No	
20-30	5	12	1.0
31-40	8	20	

**Rupture of Uterus:**

Age(in years)	n=19		P value
	Yes	No	
20-30	8	9	0.61
31-40	11	17	

**Table 8:** Stratification For Frequency Of Indications Of Emergency Peripartum Hysterectomy With Regard To Gestational Age**Morbidly Adherent Placenta:**

Gestational age (in weeks)	n=9		P value
	Yes	No	
26-37	8	23	0.23
38-40	1	13	

**Uterine Atony:**

Gestational age (in weeks)	n=13		P value
	Yes	No	
26-37	8	23	0.72
38-40	5	9	

**Rupture of Uterus:**

Gestational age (in weeks)	n=19		P value
	Yes	No	
26-37	11	20	0.17
38-40	8	6	

**Table 9:** Stratification for Frequency of Indications of Emergency Peripartum Hysterectomy with Regards To Gestational Parity**Morbidly Adherent Placenta:**

Parity	n=9		P value
	Yes	No	
1-3	4	12	0.69
>3	5	24	

**Uterine Atony:**

Parity	n=13		P value
	Yes	No	
1-3	3	13	0.32
>3	10	19	

**Rupture of Uterus:**

Parity	n=19		P value
	Yes	No	
1-3	7	9	0.88
>3	12	17	

**Table 10:** Stratification For Frequency Of Indications Of Emergency Peripartum Hysterectomy With Regards To Status Of Booking

**Morbidly Adherent Placenta:**

Booking status	n=9		P value
	Yes	No	
Booked	2	15	0.44
Unbooked	7	21	

**Uterine Atony:**

Age(in years)	n=13		P value
	Yes	No	
Booked	2	15	0.08
Unbooked	11	17	

**Rupture of Uterus:**

Age(in years)	n=19		P value
	Yes	No	
Booked	8	9	0.61
Unbooked	11	17	

**Table 11:** Stratification For Frequency Of Indications Of Emergency Peripartum Hysterectomy With Regards To Mode Of Delivery

**Morbidly Adherent Placenta:**

Mode of Delivery	n=9		P value
	Yes	No	
Cesarean delivery	6	19	0.70
Vaginal Delivery	3	17	

**Uterine Atony:**

Mode of Delivery	n=13		P value
	Yes	No	
Cesarean delivery	7	18	1.0
Vaginal Delivery	6	16	

**Rupture of Uterus:**

Mode of Delivery	n=19		P value
	Yes	No	
Cesarean delivery	11	14	0.79
Vaginal Delivery	8	12	

**DISCUSSION**

This study was conducted with the reason that the results are variant regarding frequency of etiology of hysterectomy, however, another study was required to record the current frequency in patients coming to a tertiary care hospital.

In our study, out of 45 cases, 37.78%(n=17) were between 20-30 years of age while 62.22%(n=28) were between 31-40 years of age, mean±sd was calculated as 31.67±4.67 years, mean±sd was calculated as 33.6±4.76 weeks, frequency of indications of emergency peripartum hysterectomy was recorded showing that 42.22%(n=19) had rupture of uterus, 28.89%(n=13) had uterine atony, 20%(n=9) had morbidly adherent placenta while 8.89%(n=4) had other indications of hysterectomy.

Siddiq N<sup>62</sup> and colleagues in Karachi, Pakistan conducted a 5 years clinical trial to assess the frequency and causes/indications of emergency obstetrical hysterectomy and found multipara and grand multipara women in majority, which correspond to our findings, as we recorded para >3 in majority of the patients.

Our findings are in agreement with a study conducted by *Shah N* who recorded three major indications in patients for emergency obstetrical hysterectomy i.e. ruptured uterus (35%), uterine atony (23%) and morbidly adherent placenta in 20% of women<sup>7</sup> while another retrospective clinical study of emergency hysterectomy performed between 1997 and 2007 at two tertiary hospitals to study incidence, indications and maternal mortality. There were 12 emergency hysterectomies. Indications included uterine rupture 25%(3 cases), atony 33.33%(4 cases),<sup>9</sup> we are agreed with this study also showing the uterine rupture and uterine atony as leading causes of emergency peripartum hysterectomy, but the frequencies are different with our results.

Nava Flores J,<sup>63</sup> and colleagues conducted a study with the view to identify women with potential risk for this event and to prevent this obstetric problem, they found uterine atony and placenta accrete as the most frequent and their findings are in agreement with the current study, as we found 40% of the subjects with uterine atony while 23.33% of the patients were found with placenta previa. The cause for uterine atony could be interstitial edema, as well as myometrial hypertrophy, because such histopathological diagnoses were the most common.

S Ahmad<sup>3</sup> highlighted that the major indication for cesarean hysterectomy was uterine rupture followed by placenta previa, uterine atony and abnormal placentation that is increta/accrueta/percreta. It is contrary to our results where main indication was uterine rupture followed by uterine atony and morbidly adherent placenta.

Over the past few decades indications for emergency hysterectomy have revealed a change of trend. It is attributable to previous history of caesarian section which increases the risk for hysterectomy by raising the incidence of placenta previa and abnormal placentation. However, our findings are helpful to identify and management of the morbidity accordingly in our population.

## CONCLUSION

It is confirmed that rupture of uterus and uterine atony are the common indications of peripartum hysterectomy followed by morbidly adherent placenta in patients coming to our hospital. These results are helpful for obstetrician while dealing with this morbidity.

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