

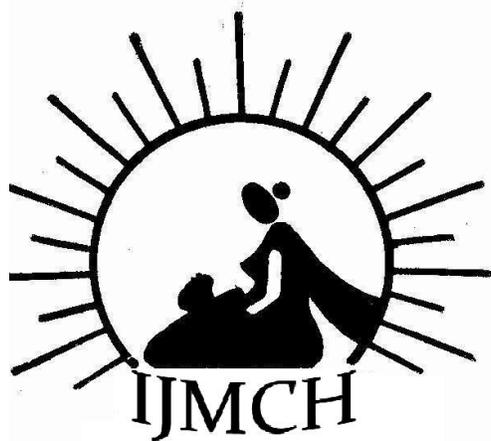
**INCIDENCE OF MORBIDITY AND MORTALITY IN  
RELATION WITH EMERGENCY OBSTETRIC  
HYSTERECTOMY IN A TERTIARY CARE CENTRE IN  
NORTH KERALA**

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Assessment of emergency obstetric hysterectomy in a tertiary care centre , risk factors ,indications and maternal and perinatal morbidity and mortality.

## INCIDENCE OF MORBIDITY AND MORTALITY IN RELATION WITH EMERGENCY OBSTETRIC HYSTERECTOMY IN A TERTIARY CARE CENTRE IN NORTH KERALA

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### ABSTRACT

**Objectives:** Assessment of emergency obstetric hysterectomy in a tertiary care centre , risk factors ,indications and maternal and perinatal morbidity and mortality.

**Materials and methods:** An indepth study of all patients who underwent obstetric hysterectomy at the Institute of maternal and child health, Kozhikode was carried out from 1<sup>st</sup> January 2010 to 30<sup>th</sup> June 2013 and evaluated for maternal age,parity,booking status,gestational age at delivery,indication for hysterectomy,associated risk factors,type of hysterectomy,it's complications and outcome.

**Results and Discussion:** Out of 51,373 deliveries, 85 obstetric hysterectomy(0.17%) was recorded. 62.3%were referred and in the age group of 25-34 years(77.64%) and were multipara(83.5%).Majority were due to atonic postpartum hemorrhage(41.17%).Morbid adherent placenta contributed to 28.2%.Previous caesarean section was identified as a risk factor in 43.5%.There were 7 maternal deaths(8.23%) and 33 perinatal deaths((39.2%). Identification of high risk groups will reduce emergency obstetric hysterectomy.Early referral to higher centres and surgery would reduce the maternal morbidity and mortality.

**Key words :** *Obstetric hysterectomy,emergency,maternal death*

### INTRODUCTION

Surgical removal of the pregnant or recently pregnant uterus could be terminologically referred as obstetric hysterectomy.This could be considered as a marker of obstetric morbidity as well.In cases of uterine rupture,morbidly adherent placenta and uncontrollable hemorrhage this procedure is a life saving surgery.Postpartum hemorrhage caused by uterine atony is an important reason for emergency obstetric hysterectomy.Another important reason is rupture uterus.Recent reports suggest that abnormal placental attachment is also one of the indications for this procedure.High incidence of maternal morbidity and mortality was reported from developing countries.Emergency obstetric hysterectomy could be practiced with proper skill and judgement to save several maternal lives.

The present study was done to assess and understand the incidence of maternal and perinatal morbidity and mortality in a tertiary care centre in North Kerala, for maternal and child health. This information would be useful to prevent and reduce the prevalent maternal and perinatal mortality rates in the future.

## MATERIALS AND METHODS

This observational study was conducted from January 1,2010 to June 30,2013 in the Department of Obstetrics and Gynaecology,Institute of maternal and child health,Government Medical College,Kozhikode.A proforma containing the patient's data ie,maternal age,parity,booking status,previous obstetric history,mode of delivery,indications for hysterectomy,associated risk factors,type of hysterectomy,intraoperative and postoperative complications,blood transfusions needed,fetal and neonatal outcome and maternal deaths were recorded.

## OBSERVATIONS

Results of this study showed that majority of patients were in the age group 25-29 years (41.1%)followed by 30-34 years(36.4%).Only 2.35% cases belonged to age groups <20 years and ≥40 years.(Table I)

**Table I: Age in relation to obstetric hysterectomy**

Age (in years)	Number	Percentage
< 20	2	2.35
20–24	9	10.5
25–29	35	41.1
30–34	31	36.4
35-39	6	7.05
≥40	2	2.35

**Table II: Association of parity**

Parity	Number	Percentage
Nullipara	4	4.7
Multipara	71	83.5
Grandmultipara	10	11.7

**Table III: Booking status**

Booking status	Number	Percentage
Referred	53	62.3
Booked	32	37.64

The data on parity showed that multipara contributed to 83.5% cases.Of the total 85 cases ,there were 11.7% grand multipara and only 4.7% nullipara.(Table II)

62.3% of cases were referred and only 37.64% cases were booked in our institute.(Table III)

Regarding the gestational age at delivery,58.8% were between 37 and 40 weeks,followed by 25.8% between 33 and 36 weeks. (Table IV)

**Table IV: Gestational age at delivery**

Gestational age in weeks	Number	Percentage
<33	10	11.7
33–36	22	25.8
37–40	50	58.8
> 40	3	3.52

**Table V: Mode of delivery**

Mode of delivery	Number	Percentage
Vaginal	36	42.35
Caesarean	49	57.6

**Table VI: Indications of hysterectomy**

Indications	Number	Percentage
Atonic PPH	35	41.17
Adherent placenta	24	28.2
Rupture uterus	18	21.17
Colporrhexis	4	4.7
Secondary PPH	2	2.35
Infected uterus	2	2.35

In this study 57.6% patients had a caesarean delivery whereas 42.35% had vaginal delivery indicating that caesarean delivery has an increased risk of obstetric hysterectomy. (Table V) In 41.17% cases ,hysterectomy was done for atonic postpartum hemorrhage.Adherent placenta was the reason in 28.2% whereas rupture was the indication in 21.17%.Colporrhexis contributed to in 4.7% and secondary PPH and infected uterus in 2.35% each. (Table VI)

Previous caesarean section was found to be the most common risk factor with an incidence of 43.5%.Placenta previa was found in 37.65% and adherent placenta and oxytocic use in 28.24% each.

Grandmultiparity was the risk factor in 11.7% cases.Fibroid and abruption contributed to 4.7% each.Inversion uterus was found in 3.53% cases.Infection ,HELLP syndrome,jaundice and multiple pregnancy were associated risk factors in 1.17% each.There were multiple risk factors in the same patient.

(Table VII)

Total hysterectomy was done in 89.4% cases and subtotal hysterectomy was done in 10.6%.(Table VIII)

**Table-VII: Risk factors**

Risk factors	Number	Percentage
Previous caesarean section	37	43.5
Placenta previa	32	37.65
Oxytocics	24	28.2
Adherent placenta	24	28.24
Grand multiparity	10	11.7
Fibroid	4	4.7
Abruption	4	4.7
Inversion	3	3.53
Obstructed labour	1	1.17
Infection	1	1.17
HELLP syndrome	1	1.17
Jaundice	1	1.17
Multiple pregnancy	1	1.17

**Table VIII Type of hysterectomy**

Type of hysterectomy	Number	Percentage
Total	76	89.4
Subtotal	9	10.6

**Table IX Intraoperative complications**

Intraoperative complications	Number	Percentage
Hemorrhage	73	85.8
Bladder injury	10	11.7
Disseminated intravascular coagulation	9	10.5
Bowel injury	2	2.35
Cardiac arrest	1	1.17

**Table X Blood transfusions**

No of blood transfusions	Number	Percentage
< 5	45	52.94
5-10	26	30.59
> 10	14	16.5

Haemorrhage was the most important intraoperative complication, seen in 85.8% cases. Disseminated intravascular coagulation was seen in 10.5%. Bladder injury occurred in 11.7% and bowel injury in 2.35% cases. There was one case of cardiac arrest among these patients. (Table IX)

In this study, 52.94% required less than 5 blood transfusions whereas 16.5% required more than 10 units of blood transfusions. (Table X)

**Table XI Postoperative complications**

Complication	Number	Percentage
Fever	18	21.7
Paralytic ileus	1	1.17
Urinary tract infection	1	1.17
Chest infection	2	2.35
Wound infection	1	1.17
Repeat laparotomy	2	2.35
Pelvic haematoma	1	1.17
Multiorgan dysfunction	3	3.5
PTE	1	1.17
Ventilatory support	18	21.7
Nil	50	58.82

**Table XII Fetal outcome**

Number of fetuses -

86

Fetal outcome	Number	Percentage of fetuses
Alive	57	66.28
Stillbirth	29	34.12

**Table XIII Neonatal outcome**

Number of live

babies-57

Neonatal outcome	Number	Percentage of live babies
Alive	53	92.98
Dead	4	7.02

**Table XIV : Maternal deaths in cases of obstetric hysterectomy**

(n=7)

Causes	Number	Percentage of maternal deaths
Hemorrhage	6	85.7
Sepsis	1	14.28

Fever was the most important postoperative complication, seen in 21.7%. 18 cases (21.7%) required ventilator support. Multiorgan dysfunction was seen in 3.5%. Repeat laparotomy was done in 2.35%. Other complications included paralytic ileus, urinary tract infection, wound infection, pelvic haematoma and pulmonary thromboembolism seen in 1.17% each. There was no postoperative complication in 58.82% of patients. (Table XI)

Of the total number of fetus, 66.28% were delivered live and 34.12% were still born. (Table XII). Of the total 57 babies, 4 died in the neonatal period (7.02%) (Table XIII)

There were 7 maternal deaths (8.23%)<sup>(3)</sup>, of which 6 cases (85.7%) resulted from hemorrhage and 1 case (14.28%) resulted from sepsis. (Table XIV)

**DISCUSSION:** Caesarean hysterectomy is a technically difficult operation because of the vascularity and anatomic changes in the pregnant uterus and supporting structures. It can be done in conjunction with caesarean section or following vaginal delivery. The most common indication is intractable uterine bleeding that cannot be controlled by other means. The common causes of massive bleeding are atonic uterus, placenta accreta and rupture uterus. There were a total of 51,373 deliveries during the study period from January 1, 2010 to June 30, 2013 and there were 85 cases of emergency obstetric hysterectomy. The incidence of obstetric hysterectomy in our study was 0.17% which is comparable to figures reported from developing countries like Pakistan<sup>(1)</sup>, ie 0.63% and 0.27%<sup>(3)</sup>.

Results of this study showed that majority of patients were in the age group 25-29 years (41.1%) comparable to other studies<sup>(1)</sup> followed by 30-34 years (36.4%). This is because majority of our pregnant patients belong to the age group of 25 to 34 years.

The data on parity showed that multipara contributed to 83.5% cases<sup>(2)</sup> comparable to other studies. Of the total 85 cases, there were 11.7% grand multipara and only 4.7% nullipara.

62.3% of cases were referred and only 37.64% cases were booked in our institute indicating the importance of early referral of high risk cases to tertiary care centres.

Regarding the gestational age at delivery, 58.8% were between 37 and 40 weeks. Among those who had hysterectomy, 57.6% patients had a caesarean delivery whereas 42.35% had vaginal delivery<sup>(5)</sup> indicating that caesarean delivery has an increased risk of obstetric hysterectomy.

The commonest indication for obstetric hysterectomy in our study was atonic postpartum hemorrhage, in 41.17% cases. However studies from developed countries indicate abnormal placentation as the primary indication<sup>(6,7,8)</sup>. Adherent placenta was the indication in 28.2% whereas rupture was the indication in 21.17%. Colporrhexis contributed to 4.7% and secondary PPH and infected uterus in 2.35% each.

Previous caesarean section was found to be the most common risk factor with an incidence of 43.5%. Placenta previa was found in 37.65% and adherent placenta and oxytocic use in 28.24% each. More than one risk factor was found in few patients. Grandmultiparity was the risk factor in 11.7% cases. Fibroid and abruption contributed to 4.7% each. Inversion uterus was found in 3.53% cases. Infection, HELLP syndrome, jaundice and multiple pregnancy were associated risk factors in 1.17% each.

Regarding the type of hysterectomy done, total hysterectomy was done in 89.4% cases and subtotal hysterectomy was done in 10.6%<sup>(4)</sup>

Haemorrhage was the most important intraoperative complication, seen in 85.8% cases. Disseminated intravascular coagulation was seen in 10.5%. Bladder injury occurred in 11.7% similar to other studies<sup>(2)</sup> and bowel injury in 2.35% cases. There was one case of cardiac arrest among these patients.

In this study, 52.94% required less than 5 blood transfusions whereas 16.5% required more than 10 units of blood transfusions.

58.82% patients had no postoperative complications. Multiple complications were seen in the same patient also. Fever was the most important postoperative complication, seen in 21.7%. 18 cases (21.7%) required ventilator support. Multiorgan dysfunction was seen in 3.5%. Repeat laparotomy was done in 2.35%. Other complications included paralytic

ileus,urinary tract infection,wound infection,pelvic haematoma and pulmonary thromboembolism seen in 1.17% each.There was no postoperative complication in 58.82% of patients.

There were 33 perinatal deaths(39.2%).Of the total number of fetuses,66.28% were delivered live and 34.12% were still born.

Of the total 57 babies,4 died in the neonatal period(7.02%)

There were 7 maternal deaths(8.23%)<sup>(3)</sup>, of which 6 cases(85.7%) resulted from hemorrhage and 1 case (14.28%) resulted from sepsis.

### CONCLUSIONS

Proper antenatal care and identification of high risk groups could be able to prevent and reduce the incidence of emergency obstetric hysterectomy. Early referral to higher centres and surgery and the availability of blood and blood products would reduce the maternal morbidity and mortality. Active management of third stage of labour should be a routine in all obstetric patients to reduce the incidence of atonic postpartum hemorrhage,which was found to be the most common indication of obstetric hysterectomy. The incidence of primary caesarean section could be reduced since this is an important risk factor for obstetric hysterectomy,with a higher chance of adherent placenta.

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