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A RETROSPECTIVE STUDY OF INCIDENCE AND RISK FACTORS OF PERI-PARTUM HYSTERECTOMY AT A TERTIARY CARE CENTRE

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Abstract-

Background And Objectives-The reported incidence of peri-partum hysterectomy varies worldwide and it is around 10.1 per 1000 deliveries in India (1).Earlier it was believed that the incidence of peri-partum hysterectomy is higher in low income groups. But now it is being observed that the risk of landing into a peripartum hysterectomy is increasing in high income groups also due to the increasing rate of caesarean sections in them. Previous caesarean delivery increases the risk of placenta accreta spectrum disorders in the subsequent pregnancies. A systematic review emphasized that the rate of placenta accreta spectrum increases from0.3% in women with previous one caesarean delivery to 6.74% for women with five or more caesarean deliveries. (2). Other important risk factors for peripartum hysterectomy are intractable PPH following vaginal or caesarean delivery, rupture uterus, uterine perforation leading to septic abortion.

Methods- This is a retrospective study performed at Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow from January 2020 to December 2022. All women who delivered at our hospital and landed in peripartum hysterectomy or were referred to our hospital and landed in peripartum hysterectomy were included in the study. Their demographic characteristics including age, parity, previous deliveries were noted. Indications of hysterectomy, per-operative and post-operative

complications, course during hospital stay, neonatal outcome, need for ICU care were noted. The results were presented as percentage for categorical variables.

Results- During the study interval of two years 34 emergency peri-partum hysterectomies were noted. Number of deliveries noted in that interval was 14,204. The incidence of emergency peripartum hysterectomies at our hospital came out to be 2.39/1000 deliveries. The main indication for peripartum hysterectomy in our study was found to be rupture uterus (44.11%) followed by PPH (35.29%). Placenta accreta spectrum was identified in 14.7% cases.

Conclusion- It may be concluded that landing into a peri-partum hysterectomy is near miss experience for a pregnant woman. Adequate contraception facilities to limit family size, proper labour monitoring and timely referral of women are important factors that can significantly reduce the risk of a woman landing into a peri-partum hysterectomy.

Keywords- Peri-partum hysterectomy, rupture uterus, PPH, Placenta Accreta Spectrum

INTRODUCTION

Peripartum hysterectomy refers to the surgical removal of uterus during delivery or in the post-partum period .It is performed as the last resort to save maternal life in cases of torrential haemorrhage following vaginal or caesarean birth when medical and other surgical methods fail or in cases of sepsis following abortion. It carries a significant risk of maternal mortality and morbidity. The reported incidence of peri-partum hysterectomy varies worldwide and it is around 10.1 per 1000 deliveries in India (1).Earlier it was believed that the incidence of peri-partum hysterectomy is higher in low income groups. But now it is being observed that the risk of landing into a peripartum hysterectomy is increasing in high income groups also due to the increasing rate of caesarean sections in them. Previous caesarean delivery increases the risk of placenta accreta spectrum disorders in the subsequent pregnancies. A systematic review emphasized that the rate of placenta accreta spectrum increases from0.3% in women with previous one caesarean delivery to 6.74% for women with five or more caesarean deliveries. (2). Other important risk factors for peripartum hysterectomy are intractable PPH following vaginal or caesarean delivery, rupture uterus, uterine perforation leading to septic abortion.

MATERIAL AND METHODS

This is a retrospective study performed at Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow from January 2020 to December 2022. The total number of deliveries in this period was 14,204 and the number of peripartum hysterectomies was found to be 34. All women who delivered at our hospital and landed in peripartum hysterectomy or were referred to our hospital and landed in peripartum hysterectomy were included in the study. Their demographic characteristics including age, parity, previous deliveries were noted. Indications of hysterectomy, per-operative and post-operative complications, course during hospital stay, neonatal outcome, need for ICU care were noted. The results were presented as percentage for categorical variables.

AIMS AND OBJECTIVES

This study was done with the objective of calculating the incidence of peripartum hysterectomy in our set-up and to analyse the risk factors leading on to it.

RESULT

During the study interval of two years 34 emergency peri-partum hysterectomies were noted. Number of deliveries noted in that interval was 14,204. The incidence of emergency peripartum hysterectomies at our hospital came out to be 2.39/1000 deliveries.

TABLE I: AGE WISE DISTRIBUTION

AGE (YEARS)	
25-29	5
30-34	23
36-40	6

TABLE II: PARITY WISE DISTRIBUTION

PRIMI	4
>1<2	9
>2	21

The mean age of the women undergoing peripartum hysterectomy was found to be 35 years (TABLE I). 21 women (61%) were found to be multipara with previous 2 or more deliveries. Out of 34, 4 women were primigravida. (TABLE II)

TABLE III: MODE OF DELIVERY IN INDEX PREGNANCY

VAGINAL	4
CAESAREAN	15

As regarding the mode of delivery in the index pregnancy, 15 women (44.11%) had delivered by caesarean section and another 15 women (44.11%) were referred to us as rupture uterus. 4out of 34 women (11.76%) had delivered vaginally. (TABLE III)

TABLE IV: INDICATION

RUPTURE UTERUS	15
ATONIC PPH	10
TRAUMATIC PPH	2
PLACENTA ACCRETA SPECTRUM	7

TABLE V: CAUSES OF PPH

TRAUMATIC	2
PLACENTA PREVIA	2
ABRUPTIO PLACENTAE	1
MULTI PARITY	5

The main indication for peripartum hysterectomy in our study was found to be rupture uterus (44.11%) followed by PPH (35.29%). Placenta accreta spectrum was identified in 14.7% cases. (TABLE IV, TABLE V)

DISCUSSION

Peripartum hysterectomy causes not only physical but also a huge psychological trauma to the patient. It endangers the life of the woman and also the fetus in many cases. It also increases the burden on the health care system in terms of requirement of ventilatory support, need for ICU care higher antibiotic coverage, NICU care and blood transfusion. This retrospective study was done with the aim of identifying risk factors predisposing to peri- partum hysterectomy so that adequate steps maybe taken to avoid the preventable causes. Causes like atonic and traumatic PPH and rupture uterus can be prevented by taking adequate precautions, training of healthcare personnels and timely referral of the patients.

In this study the incidence of peripartum hysterectomy came out to be 2.39 /1000 deliveries which is comparable to the reported incidence found in another meta-analysis i.e. 1.1 per 1000 births.(3) The

high incidence of peri-partum hysterectomy at our facility is due to the fact that it is a state referral tertiary care centre. Many patients are referred to us with PPH following delivery, with rupture uterus and with placenta accreta spectrum

The main indication of peri-partum hysterectomy in our study came out to be rupture uterus (44.11%) followed by atonic PPH (29.41%). Other causes were placenta accreta spectrum (20.58%) and traumatic PPH (5.88 %). In another study, reported from north India the most common indication came out to be uterine atony followed by morbidly adherent placenta. (4) This difference may be attributed to the fact that our facility serves as a referral centre to the rural areas of Uttar Pradesh where the cases of uterine rupture are more due increased parity and lack of timely referral of women. Out of total 34 peri-partum hysterectomies, 27 women were those who were referred to us from outside. These included 15 women with rupture uterus, 2 women with traumatic PPH following normal vaginal delivery outside, 6 women with atonic PPH following vaginal delivery, 4 women with placenta accreta spectrum. We noted a statistically significantly higher risk of landing into a peri-partum hysterectomy following caesarean section(22.3/1000)as compared to vaginal delivery (0.266/1000 deliveries). This is similar to other studies reported from India. (4, 5)

It is noteworthy that in our study 15 out of 34 women who underwent peri-partum hysterectomy had delivered by caesarean section in the index pregnancy. Out of these 15 women, 7 had previous 1 LSCS and 8 had previous 2 LSCS. So, it can be inferred that the risk of landing into PPH, rupture uterus and placenta accreta spectrum increases with the increase in the number of caesarean deliveries. This is a matter of concern mainly because delivery by caesarean section is on a rising trend in our country. Safe anaesthesia, availability of blood transfusion facilities and patient's choice are responsible for this trend.

TABLE VI: OBSTETRICAL HISTORY OF WOMEN PRESENTING WITH RUPTURE UTERUS

PREVIOUS 2 LSCS	8
PREVIOUS 1 LSCS	2
GRAND MULTIPARA	5

It was noted in this study that 15 out of 34 (44.11%) women underwent peripartum hysterectomy for rupture uterus. Out of these 15 women, 8 had history of previous 2 LSCS, 2 had history of previous 1 LSCS and 5 were grand multipara (TABLE VI). So, the risk of rupture uterus increases with increase in the number of caesarean deliveries and also with increasing parity of the mother. Hence, good family planning services and accessible adequate contraception facilities are the need of the hour. We need to take rigorous measures to limit family size and to avoid delivery by caesarean section wherever possible. In another study reported from Ghana, grand multiparity represented 41.5% cases of rupture uterus (6). A study from Pakistan also reported the overall incidence of rupture uterus to be 1.71% in which the main attributable risk factor was found to be grand multiparity (7)

TABLE VII: OBSTETRICAL HISTORY OF WOMEN WITH ATONIC PPH

PRIMI	1
MULTIPARA	4
PREVIOUS 1 LSCS	5

TABLE VIII: INOTROIPIC SUPPORT

SINGLE AGENT	8
MULTIPLE AGENT	NIL

TABLE IX: POST-OPERATIVE COMPLICATIONS

FEBRILE MORBIDITY	20
RELAPAROTOMY	2
WOUND GAPE	7
DIC	6
NICU ADMISSION	6
MORTALITY	4

As was seen in this study, 10 women underwent peri-partum hysterectomy for atonic PPH (29.41%). Out of these, 4 women had history of previous 1 LSCS, 5 women were multipara and one patient was primigravida who had come to us with massive abruption (TABLE VII). In these cases of atonic PPH initial medical and surgical management was done which included bilateral uterine artery ligation and application of b-Lynch sutures. In another study from North India atonic PPH accounted for 27.6% cases of emergency peri-partum hysterectomy (8). Out of 34 peri-partum hysterectomies 8 women (23.52%) had to be taken on vasopressor support perioperatively (TABLE VIII) which is close to the result obtained from similar study done in China (9). All the 34 women needed ICU care post-operatively which included ventilatory support, blood transfusion and i/v antibiotics. 2 women out of 34 (5.88%) had bladder injury. The most common post-operative complication was febrile morbidity (58.82%) (TABLE IX). Similar results were noted in other studies (4, 5, 9). 2 women (5.8%) needed re-laparotomy which is comparable to the other study reported from our country (4). The incidence of DIC noted in our study (17.64%) is comparable to the data reported from other studies .i.e. 12.5% (4). There was a 31 % NICU admission rate found in our study which is quite high as compared to 18 % found in the other studies (4). This may be attributed to the fact that the prevelance of low birth weight babies is higher in our region due to maternal malnutrition. 4 out of 34 (11.76%) women died post-operatively which is comparable to the data from other studies (4).

Conclusion-

It may be concluded that landing into a peri-partum hysterectomy is near miss experience for a pregnant woman. Unlike western countries where majority of the cases are due to placenta accrete spectrum, in our country even till date the most number of the cases are due to rupture uterus and atonic PPH. Adequate contraception facilities to limit family size, proper labour monitoring and timely referral of women are important factors that can significantly reduce the risk of a woman landing into a peri-partum hysterectomy.

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