DOI: 10.14260/jemds/2015/1773

ORIGINAL ARTICLE

PERIPARTUM HYSTERECTOMY: A LIMITING FACTOR FOR PROCREATIVE POTENTIAL & SAFE-MOTHERHOOD: A 5 YEARS RETROSPECTIVE STUDY

U. Agnes Vijaya[1], Anusha Patel[2], Purushothama Reddy K[3], Mallesh M[4], A. Nagaraj[5]

HOW TO CITE THIS ARTICLE:
U. Agnes Vijaya, Anusha Patel, Purushothama Reddy K, Mallesh M, A. Nagaraj. "Peripartum Hysterectomy: A Limiting Factor for Procreative Potential & Safe-Motherhood: A 5 Years Retrospective Study". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 71, September 03; Page: 12277-12286, DOI: 10.14260/jemds/2015/1773

ABSTRACT: BACKGROUND: The term hysterectomy means surgical removal of uterus it can be either along with cervix or adnexae through different routes. The most commonly performed major elective gynecological surgery. The term Peripartum hysterectomy is used when performed either mostly by emergency as a maternal life saving measure within 24 hours after vaginal or abdominal delivery or as electively when indicated. **OBJECTIVE:** To study the incidence of peripartum hysterectomy; to analyze its causes, risk factors, complications and feto-maternal morbidity and mortality at newly established tertiary care teaching hospital. **PLACE OF STUDY:** Rajiv Gandhi Institute of Medical Sciences (RIMS), Kadapa, YSR district, Andhra Pradesh, South India. **DESIGN AND DURATION:** Retrospective study of 5 years period, Jan.'2010 to Dec.'2014. **MATERIALS AND METHODS:** 42 cases of peripartum hysterectomised patients medical records reviewed for characteristics of current pregnancy and delivery, indications for peripartum hysterectomy, operative and post-operative complications, maternal and perinatal outcome evaluated. **RESULTS:** 42 cases of peripartum hysterectomy identified out of 32398 total deliveries (1.3 in 1000). Among them 23 cases was Laparotomy for rupture uterus, Caesarean hysterectomy in 12 cases, followed by vaginal delivery in 6 cases and for chronic ectopic pregnancy with bilateral T.O. mass in 1 case (P2 L2 +Bil. T. with chronic ectopic for failed tubectomy). No Live Children in 9 cases & 1 Live Child in 19 cases were identified and 2 or more Live Children in 14 cases. **CONCLUSIONS:** The incidence of peripartum hysterectomy is similar to the data found in studies of other Asian countries. Most frequent indication being rupture uterus leading to high perinatal, maternal mortality and morbidity limiting the child bearing capacity (Procreative Potential). To reduce this high incidence of peripartum hysterectomy effective MCH services to be exercised at all the levels of health care delivery system in developing countries like India to maintain safe-motherhood.

KEYWORDS: Peripartum hysterectomy, Rupture uterus, PPH, Abnormal placentation, Procreative potential, Maternal Mortality and Perinatal Mortality.

INTRODUCTION: The term hysterectomy means surgical removal of uterus it can be either along with cervix or adnexae through different routes. The most commonly performed major elective gynecological surgery. The term Peripartum hysterectomy is used when performed either mostly by emergency as a maternal life saving measure within 24 hours after vaginal or abdominal delivery or as electively when indicated.[1]

The moment of decision for peripartum hysterectomy grieves the woman and family members especially with no live child as permanently she lands up in incapacitation for child bearing and cyclical menstrual function. It alerts treating obstetrician and the entire surgical team at any hour of the day or night with the provision of adequate nursing support and lab facilities. Technique needs experience and skill of the surgeon. Procrastination (Concentrating on alternative methods) increases the risk of both morbidity and mortality.[2]

DOI: 10.14260/jemds/2015/1773

Caesarean hysterectomy 1st proposed by Cavanelli in 1786 where mother and baby could not be survived. (East African medical journal). Horatio Storer 1st performed caesarean hysterectomy in 1869. (Te Lindes). In 1876 Edward Porro 1st published a case report of successful caesarean hysterectomy where mother and baby were survived. (Women's health journal Nigeria).[3]

The mortality of peripartum hysterectomy is more than 25 times that of hysterectomy performed outside of pregnancy[4]. Recent advances in the medical and conservative management of postpartum hemorrhage have reduced the rate and indications for EPH, while sophistication in obstetric care and blood transfusion services have improved outcomes, especially in developed countries.[5,6] Advances in interventional radiology have also provided the option of uterine artery embolization.[7,8]

With regard to clinical implications, hemorrhage continues to be the leading individual cause of maternal death worldwide accounting for 27.1% of deaths as recently as 2014.[5] In this analysis, India and Nigeria together accounted for a 3rd of global maternal deaths[5]. More alarming is the fact that some studies from developed nations are pointing towards an increase in the rate of postpartum hemorrhage.[6] One meta-analysis reported an annual increase of 8% in the incidence of EOH (Emergency Obstetric Hysterectomy) around the world.[7]

SL. NO.	COUNTRY	POPULATION	INCIDENCE
1.	Pakistan	1000	5.6
2.	Nigeria	1000	1.8 - 5.4
3.	US	1000	1.2 - 2.7
4.	INDIA	1000	2.6
5.	UK		
i.	Norway	1000	0.2
ii.	Ireland	1000	0.3
Global Incidence[9]			

Unfavourable Conditions for Eph (Emergency Peripartum Hysterectomy):[10] In Developing countries like India have high rates of this procedure because of more deliveries (70%) take place outside the hospital, by unskilled birth attendants. Around 15-20% women deliver spontaneously without assistance from anyone (home delivery).

OBJECTIVE: (Retrospective Analytical): This study was conducted to determine the Incidence, to analyze causes, risk factors, complications and feto-maternal morbidity and mortality at newly established tertiary care teaching hospital.

MATERIALS AND METHODS: It's a retrospective study of 42 cases of women who underwent peripartum hysterectomy during the period of JAN.'2010–DEC.'2014. Study variables are–age groups, incidence of procedure, socio-demographic characteristics of patients, indications, management options, feto-maternal outcomes (Morbidity & Mortality). Post-operative counseling was carried out for all the cases before they were discharged to help them to accept the loss of menstrual function and child bearing ability that inevitably accompany the procedure.

DOI: 10.14260/jemds/2015/1773

RESULTS & ANALYSIS: Among 32,398 deliveries during the period of 5 years i.e., from JAN.'2010 – DEC.'2014 at RIMS-Kadapa, YSR district, Andhra Pradesh, South India. 42 women underwent emergency peripartum hysterectomy (EPH). Present study incidence is 1.3 in 1000. It is more than the incidence of developed countries & less than the incidence of underdeveloped countries.
Among the 42 cases 25 were unbooked and 17 were booked.

Table no. 1: Distribution of Cases Based on Age Groups: Out of 42 cases 14 (33.33%) were in between 19–22 years, 21 (50%) were 23–29 years and only 7 (16.66%) cases were 30–35 years.

SL. NO.	AGE GROUPS	NO. OF CASES (n=42)	PERCENTAGE
1	19 – 22 years	14	33.33
2	23 – 29 years	21	50
3	30 – 35 years	07	16.66

Table 1

Table no. 2: Gravid Status Wise Distribution of Cases: Out of 42 cases 30 (71.4%) were Multigravidae and 12 (28.5%) were Primigravidae.

SL. NO.	GRAVID STATUS	NO. OF CASES (n=42)	PERCENTAGE
1	Primigravidae	12	28.5
2	Multigravidae	30	71.4

Table 2

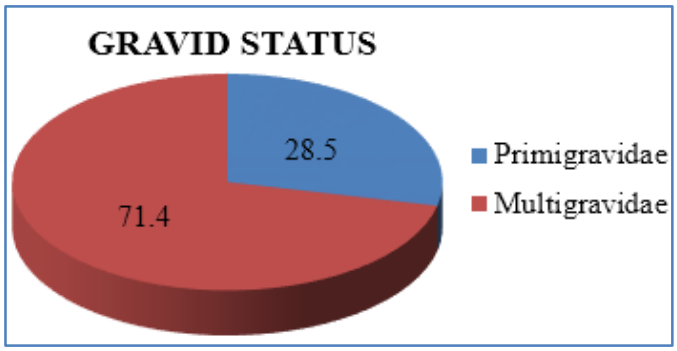

Fig. 1: Gravid Status Wise Distribution of Cases

Table no. 3: The Observed Timing Impact on EPH: Most of the cases landed up for EPH during night (i.e., between 9 PM and 6 AM) 25 cases. Remaining cases landed up during day time (i.e., between 6 AM and 9 PM) 17 cases. The identification of timing impact reflects the multifactorial reasons & conditions leading for EPH.

SL. NO.	TIMING OF EPH	NO. OF CASES (n=42)	PERCENTAGE
1	6 AM – 9 PM	17	40.5
2	9 PM – 6 AM	25	59.5

Table 3

DOI: 10.14260/jemds/2015/1773

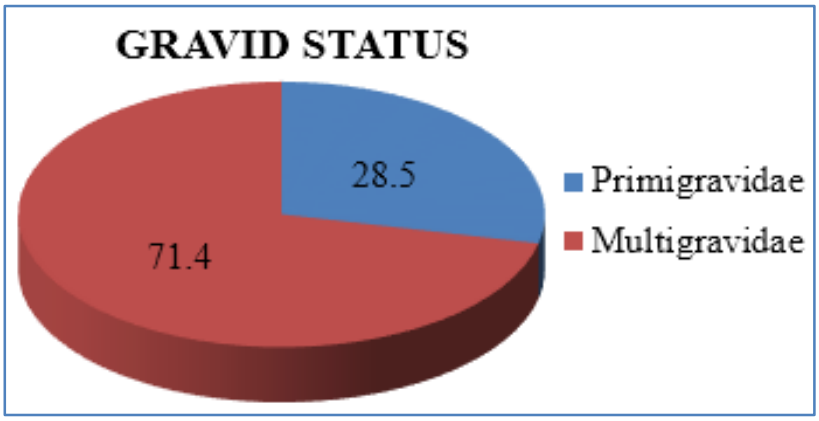

Fig. 2: Timing of EPH

TABLE NO. 4: DISTRIBUTION OF CASES BASED ON CAUSES: Out of 42 cases 23 (54.8%) were having rupture uterus, 11 (26.2%) were uterine atony, 4 (9.6%) were Abnormal placentation, 2 (4.8%) were Couvelaire uterus and 1 (2.3%) was ectopic pregnancy and 1 (2.3%) was didelphy uterus with torsion.

SL. NO.	CAUSES	NO. OF CASES (n=42)	PERCENTAGE
1	Rupture Uterus	23	54.8
2	Uterine Atony	11	26.2
3	Abnormal Placentation	4	9.6
4	Couvelaire Uterus	2	4.8
5	Ectopic Pregnancy	1	2.3
6	Didelphy Uterus with Torsion	1	2.3

Table 4

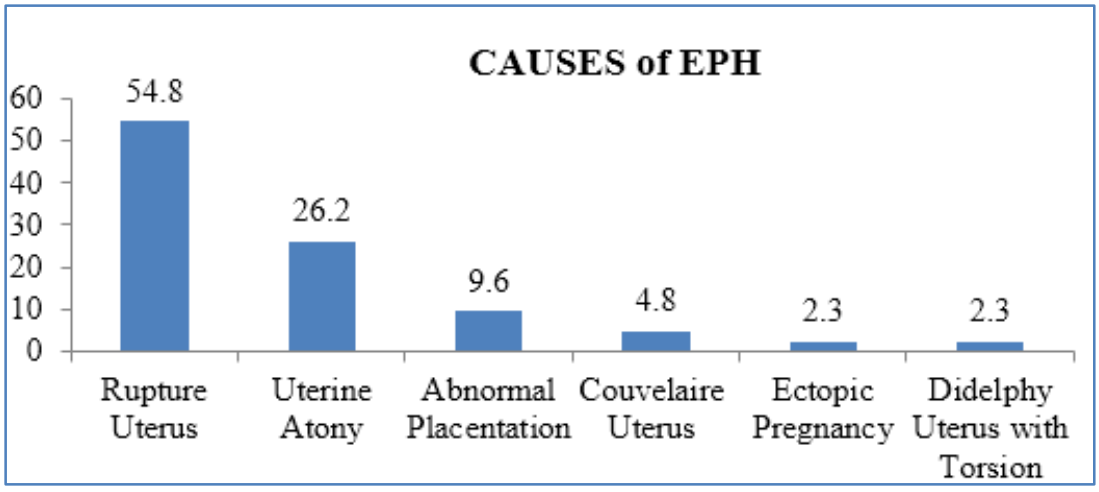

Fig. 3: Distribution of Cases Based On Causes

DOI: 10.14260/jemds/2015/1773

Table no. 5: Risk Factors Identified for EPH:

SL. NO.	RISK FACTORS
1.	Socio - demographic factors
i	Low levels of literacy
ii	Marriage at an early age
iii	Socioeconomic deprivation
iv	Desire for large family
v	Low prevalence of contraceptive use
iv	Ineffective performance of MCH services
2.	Prior LSCS
3.	Multi gravida with prolonged (or) Obstructed labour
4.	Low lying (or) Abnormal placentation
5.	Failed conservative medical measures
6.	Failed interventions
7.	Inability to carry out the skilled procedures

Table 5

Conservative Measures Done:

1. Rent repair is done in favorable cases of Rupture uterus.
2. For PPH - Medical management is done by using the following medications:
   i. Misoprostol, PGE_1 (oral, sublingual & per rectal),
   ii. Carboprost PGF_2alpha (IM and intra myometrial),
   iii. Oxytocin (IM, IV infusion)
   iv. Ergometrine (IV or IM).

Interventions done are:

- Manual compression of uterus,
- Insertion of B –lynch sutures.
- Uterine packing with catheters & tamponade, Because of lack of experience we could not be able to do following conservative procedures:
- Uterine artery ligation
- Internal iliac ligation (Hypogastric artery)
- Uterine artery embolisation.

DOI: 10.14260/jemds/2015/1773

Table no. 6: Mode of Delivery: Out of 42 Laparotomy for rupture uterus was done in 23 (54.8%), Caesarean hysterectomy in 12 (28.5%), Vaginal deliveries 6 (14.3%) cases and 1 (2.3%) is chronic ectopic pregnancy with bilateral T.O. (Tubo ovarian) mass.

SL. NO.	MODE OF DELIVERY	NO. OF CASES (n=42)	PERCENTAGE
1	Laparotomy for rupture uterus	23	54.8
2	Caesarean hysterectomy	12	28.5
3	Vaginal delivery	6	14.3
4	Chronic Ectopic pregnancy with bilateral T.O mass	1	2.3

Table 6

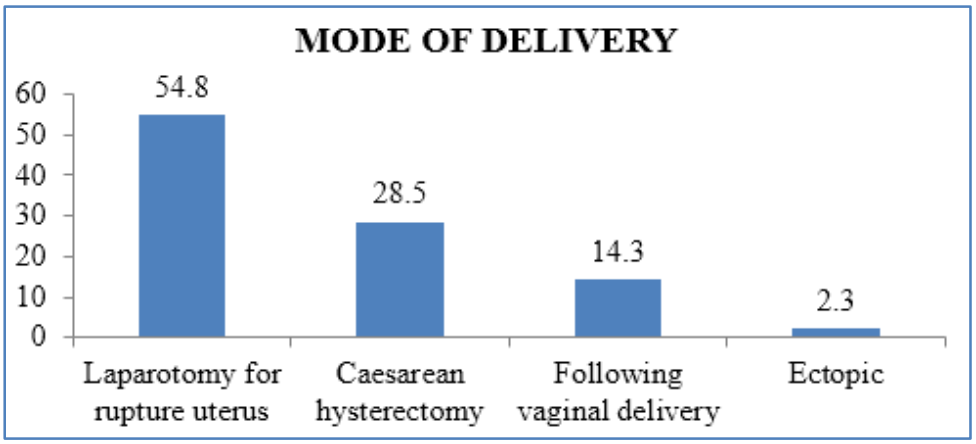

Fig. 4: Mode of Delivery in 42 Cases of EPH

Table no. 7: Patients Underwent type of Hysterectomy: Total hysterectomy was done in 30 (71.42%) cases and subtotal in 12 (28.57%) cases.

SL. NO.	TYPE OF HYSTERECTOMY	NO. OF CASES (n=42)	PERCENTAGE
1	Subtotal	12	28.57
2	Total	30	71.42

Table 7

SUB-TOTAL EPH (Vs) TOTAL EPH:

- Women with subtotal hysterectomy (cervix is retained) are without cyclical menstruation & at risk for Ca Cx. (Cervical Stump-cancer).
- As the menstrual irregularities are the commonest complaints leads women to attend the gynecological clinic, it is an opportunity to screen the cervical cancer by subjecting them for pap - smear examination.

DOI: 10.14260/jemds/2015/1773

- In developing countries subtotal hysterectomised patients doesn't come for regular screening for Ca Cx.
- Where the conditions are favorable Total hysterectomy (Uterus with cervix) is preferred, as the cervix is commonest site for gynecological cancer.

Table no. 8: Status of Living Children: No Live Children in 9 cases & 1 Live Child in 19 cases were identified 2 or more in 14 cases.

SL. NO.	STATUS OF LIVING CHILDREN	NO. OF CASES (n=42)	PERCENTAGE
1	NO LIVING CHILDREN	9	21.42
2	1 LIVE CHILD	19	45.23
3	2 OR MORE	14	33.33

Table 8

Table no. 9: Distribution of Cases Based on Perinatal Outcome: In 42 cases Perinatal Mortality were found in 16 (38%), IUD in 13 (30%) and Stillborn in 3 (7%).

SL. NO.	PERINATAL OUTCOME	NO. OF CASES (n=42)	PERCENTAGE
1	**Live born**	**26**	**61.9**
2	Perinatal Mortality	16	38
i.	IUD	13	81.25
ii.	Stillborn	3	18.75

Table 9

Table no. 10: Distribution of Cases Based on Maternal Outcome: Out of 42, 5 (11.9%) were Bladder Repair, 3 (7.1%) were Wound Infection, 2 (4.8%) were Maternal Mortality, 1 (2.3%) were Pelvic Abscess, VVF, URTI, Puerperal Depression, Thromboembolism.

SL. NO.	MATERNAL OUTCOME	NO. OF CASES (N=42)	PERCENTAGE
1	**Blood transfusions**	**42**	**100 %**
2	No complications	27	64.3
3	Bladder Repair	5	11.9
4	Wound Infection	3	7.1
5	Pelvic Abscess	1	2.3
6	VVF	1	2.3
7	URTI	1	2.3
8	Puerperal Depression	1	2.3
9	Thromboembolism	1	2.3
10	Maternal Mortality	2	4.8

Table 10

DOI: 10.14260/jemds/2015/1773

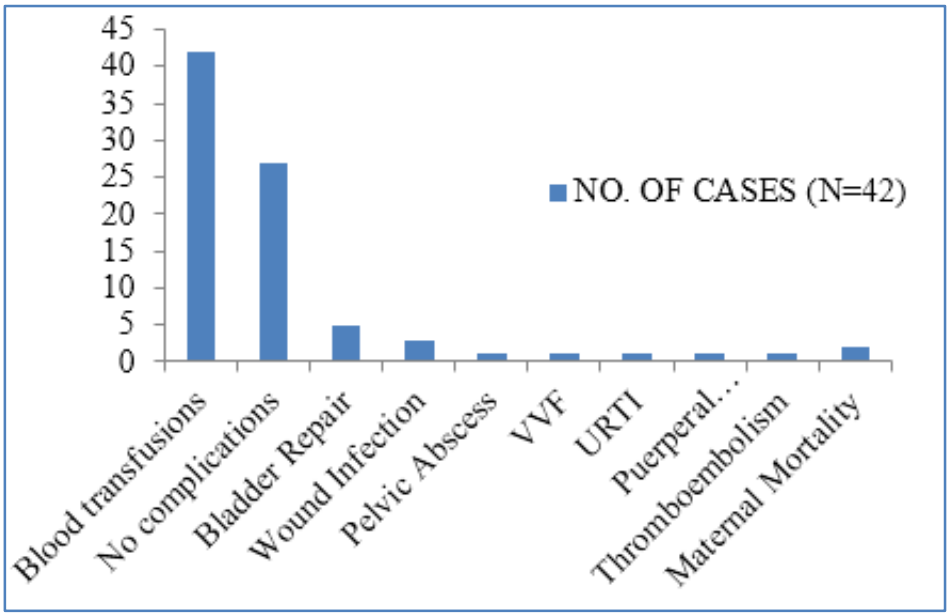

Fig. 5: Cases Based on Maternal Outcome

DISCUSSION: 'Storer' performed the first cesarean hysterectomy in the United States in 1869. Soon thereafter; Porro of Milan described the first cesarean hysterectomy in which the infant and mother survived. As a mark of honor, the procedure is frequently referred to as the Porro operation.[8]

Peripartum hysterectomy is generally performed in life threatening situations and its incidence varies geographically. The incidence quoted in the literature varies between 1:303 to 1:5000 deliveries. Although the incidence of rupture uterus is high, this study does not include cases that had rupture uterus which were treated conservatively by rent repair.[10]

Obstetrical hysterectomy still remains a lifesaving operation. The most common indications for the obstetric hysterectomy are: rupture of the uterus, uterine atony and placenta's pathologies. Obstetrical hysterectomy is connected with high risk of complications and maternal mortality.[11]

The risk factors were multiparity, previous cesarean delivery, current cesarean birth and abnormal placentation. Similar risk factors were observed in other studies.[12] Obstetric hysterectomy is a necessary life-saving procedure. Rupture uterus is the leading cause of emergency hysterectomy in our present study.

Identified Triad of Association for EPH:

- Grand multiparity.
- Low socioeconomic class.
- Unbooked cases.

This Triad of Conditions Indicates Risk Factors[13]:

- The case fatality is due to severe blood loss anemia.
- Seriously complicated by coagulopathy, tissue hypoxia hypothermia and acidosis, which further compromise the patient's condition.

- Timing is critical to an optimal outcome.
- The Obstetrician will have to avoid spending time on alternative techniques that are proving ineffective and move judiciously to the definitive and lifesaving hysterectomy (EPH).

CONCLUSION: As the rupture uterus is the leading cause which in-turn due to obstructed labour or prolonged labour and previous c/s pregnancies without proper monitoring with partogram under the skilled observation:

i. All efforts should be made to reduce the cesarean rates.
ii. Prolonged labour should be avoided by proper diagnosis, clinical monitoring and appropriate timely interventions.
iii. To avoid grand multiparity by practicing appropriate implementation of family welfare methods and advising suitable spacing in between pregnancies.

The incidence of peripartum hysterectomy is similar to the data found in studies of other Asian countries. EPH is associated with high perinatal, maternal mortality and morbidity limiting the child bearing capacity (procreative potential). The peripartum hysterectomised status grieves the woman and family members especially with no live child as permanently she lands up in incapacitation for child bearing and cyclical menstrual function.

To reduce this high incidence of peripartum hysterectomy effective MCH services to be exercised at all the levels of health care delivery system in developing countries like India to maintain safe-motherhood.

BIBLIOGRAPHY:

1. Wise A, Clark V. Challenges of major obstetric hemorrhage. Best Pract Res Clin Obstet Gynaecol. 2010*;* 24*:* 353-65.
2. Glaze S, Ekwalanga P, Roberts G, Lange I, Birch C, Rosengarten A, et al. Peripartum hysterectomy*:* 1999 to 2006. Obstet Gynecol. 2008*;* 111*:* 732.
3. Bodelon C, Bernabe-Ortiz A, Schiff MA, Reed SD. Factors associated with peripartum hysterectomy. Obstet Gynecol. 2009*;* 114*:* 115
4. Wright JD, Devine P, Shah M, Gaddipati S, Lewin SN, Simpson LL, et al. Morbidity and mortality of peripartum hysterectomy. Obstet Gynecol. 2010*;* 115*:* 1187.
5. Shellhas CS, Gilbert S, Landon MB, Verner MW, Leveno KJ, Hauth JC, et al. Eunice Kennedy Shriver National Institutes of Health and Human Development Maternal-Fetal Medicine Units Network. The frequency and complication rates of hysterectomy accompanying cesarean delivery. Obstet Gynecol. 2009*;* 114 (2 Pt 1)*:* 224–9.18.
6. Zwart JJ, Dijk PD, van Roosmalen J. Peripartum hysterectomy and arterial embolization for major obstetric hemorrhage*:* a 2-year nationwide cohort study in the Netherlands. Am J Obstet Gynecol. 2010*;* 202*:* 150.
7. Choi SJ, Song SE, Jung KL, Oh SY, Kim JH, Roh CR. Antepartum risk factors associated with peripartum cesarean hysterectomy in women with placenta previa. Am J Perinatol. 2008*;* 25*:* 37-41
8. Kwee A, Bots ML, Visser GH, Bruinse HW. Emergency peripartum hysterectomy*:* A prospective study in The Netherlands. Eur J Obstet Gynecol Reprod Biol. 2006*;* 124(2)*:* 187-92.

DOI: 10.14260/jemds/2015/1773

9. Knight M*;* UKOSS. Peripartum hysterectomy in the UK*:* management and outcomes of the associated hemorrhage. Br J Obstet Gynaecol 2007*;* 114*:* 1380-7.
10. Kant A, Wadhwani K. Emergency obstetric hysterectomy. J Obstet Gynecol India. 2005*;* 55 (2)*:* 132-134.
11. Daskalakis G, Anastasakis E, Papantoniou N, Mesogitis S, Theodora M, Antsaklis A. Emergency obstetric hysterectomy. Acta Obstet Gynecol Scand. 2007*;* 86(2)*:* 223-7.
12. Ehtisham S. Emergency Peripartum Hysterectomy. Pak J Surg 2011*;* 27(4)*:* 288-291
13. Rabenda-Łacka K, Wilczyński J, Radoch Z, Breborowicz GH. Obstetrical hysterectomy. Ginekol Pol. 2003*;* 74*:* 1521-5.

AUTHORS:

1. U. Agnes Vijaya
2. Anusha Patel
3. Purushothama Reddy K.
4. Mallesh M.
5. A. Nagaraj

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Obstetrics & Gynaecology, RIMS, Kadapa, Andhra Pradesh.
2. Post Graduate Student, Department of Obstetrics & Gynaecology, RIMS, Kadapa, Andhra Pradesh.
3. Associate Professor, Department of Pharmacy Practice, P. Rami Reddy Memorial College of Pharmacy, Kadapa, India.
4. Pharm D Intern, Department of Pharmacy Practice, P. Rami Reddy Memorial College of Pharmacy, Kadapa, India.
5. Pharm D Intern, Department of Pharmacy Practice, P. Rami Reddy Memorial College of Pharmacy, Kadapa, India.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Purushothama Reddy K,
Associate Professor,
Department of Pharmacy Practice,
P. Rami Reddy Memorial College of Pharmacy,
Kadapa, India.
E-mail: reddypharma6@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None

Date of Submission: 16/08/2015.
Date of Peer Review: 17/08/2015.
Date of Acceptance: 29/08/2015.
Date of Publishing: 01/09/2015.