RESEARCH PAPER

Risk Factors and Outcome of Emergency Obstetric Hysterectomy: An Observational Study at a Tertiary Care Centre

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ABSTRACT

Background: Emergency obstetric hysterectomy (EOH) is a life-saving procedure for intractable obstetric haemorrhage. With rising caesarean section rates globally, placenta accreta spectrum (PAS) has emerged as a predominant indication, representing a paradigm shift from the traditional predominance of uterine atony.

Aim: To analyse the risk factors and outcomes of emergency obstetric hysterectomy at a tertiary care centre.

Materials and Methods: Combined retrospective and prospective observational study at MGMC&H, Jaipur, over 10 years (January 2016–December 2025). All 34 cases of EOH out of 34,937 deliveries were analysed for demographics, risk factors, indications, surgical details, and maternal-fetal outcomes.

Results: Incidence of Emergency obstetrics hysterectomy: 0.97 per 1,000 deliveries. Mean age was 29.15±4.02 years. Previous CS was present in 85.29% (OR=4.82, p<0.001). PAS was the leading indication (58.82%), followed by uterine atony (26.47%) and rupture (8.82%). Among themtotal obstetric hysterectomy was done in 85.29% and subtotal obstetric hysterectomy was done in 14.71%. Mean estimated blood losswas 2520.59±686.13 mL; all patients required blood transfusion and 70.59% required ICU admission. Maternal mortality was 2.94% (1/34) and perinatal mortality was 11.76%.Logistic regression identified previous caesarean section (OR 4.82; 95% CI 2.14–10.86; p<0.001), abnormal placentation (OR 3.64; p<0.01), inadequate antenatal care (OR 2.46; p=0.02), and multiparity (OR 2.18; p=0.04) as significant independent risk factors.

Conclusion: PAS has emerged as the predominant indication for EOH, surpassing uterine atony, directly linked to rising CS rates. Previous CS is the strongest risk factor (OR=4.82). Reducing unnecessary primary CS, enhancing antenatal PAS screening, and timely referral are essential.

Keywords: Emergency obstetric hysterectomy; Placenta accreta spectrum; Caesarean section; Postpartum haemorrhage; Uterine atony; Risk factors; Maternal mortality

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INTRODUCTION

Emergency obstetric hysterectomy (EOH) is the surgical removal of the uterus performed as a life-saving measure in the setting of intractable obstetric haemorrhage unresponsive to conservative management. Although a procedure of last resort, it remains an indispensable component of emergency obstetric care, particularly in low- and middle-income countries where postpartum haemorrhage (PPH) continues to be the leading cause of maternal mortality, accounting for approximately 27% of all maternal deaths globally.[1–4]

The global incidence of EOH varies widely, from 0.2 per 1,000 deliveries in high-income countries to 3.0 per 1,000 in lower middle-income nations.[5,6] In India, the incidence ranges from 0.83 to 5.94 per 1,000 deliveries depending on the centre and referral pattern.[7,8] The landmark systematic review and meta-analysis by Kallianidis et al.[5] (2023, 128 studies, 58 million births) reported a global pooled incidence of 1.1 per 1,000 births with a case fatality rate of 3.2%, and critically demonstrated that lower middle-income countries bear a disproportionately higher burden with incidence rates approximately 4-fold higher than high-income nations.

Traditionally, uterine atony was the predominant indication for EOH worldwide. However, a significant paradigm shift has occurred over the past two decades, driven primarily by the rising global caesarean section rates. The Kallianidis et al.[5] meta-analysis documented that placental pathology (38.0%) has now

surpassed uterine atony as the leading indication globally. Placenta accreta spectrum (PAS)—encompassing accreta, increta, and percreta—is directly linked to uterine scar implantation following caesarean delivery, with the risk increasing exponentially with each successive CS.[9–11] In India, the national CS rate has risen from 17.2% (NFHS-4, 2015–16) to 21.5% (NFHS-5, 2019–21) nationally, with rates exceeding 40–50% in some states and private institutions.[12]

The present study was conducted to analyse the incidence, risk factors, indications, and maternal-fetal outcomes of emergency obstetric hysterectomy at a tertiary care centre in Rajasthan over a 10-year period, providing comprehensive data from a region with a high burden of obstetric complications and rapidly rising CS rates.

AIM AND OBJECTIVES

Aim: To analyse the risk factors and outcome of emergency obstetric hysterectomy at a tertiary care centre.

Objectives:

1. To determine the incidence and indications of emergency obstetric hysterectomy.

2. To identify the risk factors associated with EOH using logistic regression analysis.

3. To evaluate maternal and fetal outcomes following EOH.

MATERIALS AND METHODS

Study Design: Combined retrospective (January 2016–September 2024) and prospective (October 2024–December 2025) observational study at the Department of Obstetrics & Gynaecology, MGMC&H, Jaipur. Approved by IEC. Consent obtained for prospective case

Participants: All 34 consecutive cases of EOH performed out of 34,937 deliveries over the 10-year study period.Cases were excluded if the hysterectomy was done for gynaecological indications, if medical records were incomplete or irretrievable or if the patient has delivered outside and was referred solely for complication management. Complete case records reviewed for retrospective cases; prospective cases followed from admission to discharge.

Data Collection: Demographics (age, parity, residence, SES, booking status, gestational age), obstetric history (previous CS, previous pregnancies), antenatal complications, indications for EOH, mode of delivery, type of hysterectomy (total/subtotal), intraoperative details (EBL, duration, complications, conservative measures attempted), blood product transfusion, ICU admission, ventilatory support, postoperative complications, hospital stay, maternal outcome, and fetal/neonatal outcome (birth weight, Apgar, NICU admission, perinatal mortality).

Risk Factor Analysis: Binary logistic regression with odds ratios (OR) and 95% confidence intervals for potential risk factors. Chi-square test for categorical variables.

Statistical Analysis: SPSS version 26.0. Continuous variables: mean ± SD. Categorical variables: frequencies and percentages. $p<0.05$ significant.

RESULTS

A total of 34 cases of EOH were identified over 10 years out of 34,937 deliveries, yielding an incidence of 0.97 per 1,000 deliveries (0.097%). The findings are presented in Tables 1–7 with corresponding figures below.

Table 1: Demographic and Obstetric Profile (n=34)

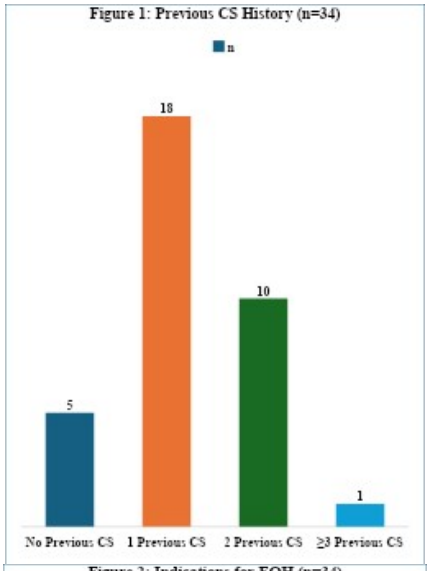
Parameter	n (%)	Additional
Age		
26–30 years	15 (44.12%)	Mean 29.15±4.02
31–35 years	12 (35.29%)	Range 20–38
Others (≤25, ≥36)	07 (20.59%)	
Residence / SES / Booking		
Rural	25 (73.53%)	p<0.01*
Lower SES	23 (67.65%)	p<0.001*
Unbooked / Referred	29 (85.29%)	
Parity		
Primipara	13 (38.24%)	
Multipara (≥P2)	19 (55.88%)	
Grand Multipara	02 (05.88%)	

Parameter	n (%)	Additional
Gestational Age		
Term (37–40 weeks)	16 (47.06%)	
Late Preterm (33–36)	12 (35.29%)	
<33 weeks	06 (17.65%)	
Previous Caesarean Section		
Any Previous CS	29 (85.29%)	OR=4.82, p<0.001*
1 Previous CS	18 (52.94%)	
2 Previous CS	10 (29.41%)	
≥3 Previous CS	01 (02.94%)	

The demographic profile reveals a young population (mean age 29.15 years, peak 26–30 years at 44.12%) with predominantly rural residence (73.53%, p<0.01), lower socioeconomic status (67.65%, p<0.001), and strikingly high proportion of unbooked/referred cases (85.29%)—highlighting the critical role of inadequate antenatal care in the pathway to EOH. Previous CS was present in 85.29% of patients (29/34)—the single strongest independent risk factor (OR=4.82, 95% CI 2.14–10.86, p<0.001)—with more than half having undergone one previous CS (52.94%) and nearly one-third having two or more (32.35%).**Table 2: Indications for Emergency Obstetric Hysterectomy (n=34)**

Indication	n	Percentage (%)
Placenta Accreta Spectrum (PAS)	20	58.82
Placenta Previa with placenta accreta spectrum	12	35.29
Placenta accreta without placenta previa	08	23.53
Uterine Atony (Refractory PPH)	09	26.47
Uterine Rupture	03	08.82
Placenta previa without PAS	01	02.94
Scar Ectopic Pregnancy	01	02.94

Placenta accreta spectrum was the leading indication for EOH in our study, accounting for 58.82% of all cases (20/34). This represents a significant paradigm shift from the traditional predominance of uterine atony, which was the second most common indication at 26.47% (9/34). Among PAS subtypes, placenta accreta was most common (8/20, 40.00%), followed by placenta previa with accreta (6/20, 30.00%), and placenta increta and percreta (3 each, 15.00%). Uterine rupture accounted for 8.82% (3/34). Total placental pathology (PAS + isolated previa) accounted for 61.76% of all EOH cases. The high PAS proportion directly correlates with the 85.29% previous CS prevalence in our cohort.



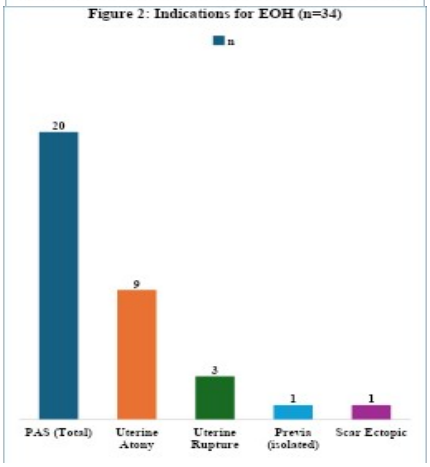


Table 3: Surgical Profile and Intraoperative Details (n=34)

Parameter	n (%) / Mean±SD	Additional
Mode of Delivery		
LSCS	25 (73.53%)	
Vaginal Delivery	04 (11.76%)	
Laparotomy / Hysterotomy	05 (14.71%)	
Type of Hysterectomy		
Total Hysterectomy	29 (85.29%)	
Subtotal Hysterectomy	05 (14.71%)	
Intraoperative Parameters		
Estimated Blood Loss (mL)	2520.59±686.13	Range 1600–4500
Duration of Surgery (min)	110.88±19.75	Range 80–155
Intraoperative Complications		
PPH / Intractable Bleeding	18 (52.94%)	
Bladder Injury	03 (08.82%)	
Broad Ligament Haematoma	03 (08.82%)	
None	10 (29.41%)	
Conservative Measures Before EOH*		
Uterotonics	33 (97.06%)	
Uterine Massage	22 (64.70%)	
B-Lynch Suture	10 (29.41%)	
Uterine Artery Ligation	10 (29.41%)	
Balloon Tamponade	08 (23.53%)	

LSCS was the predominant mode of delivery (73.53%), reflecting the strong association between CS and the development of PAS. Total hysterectomy was performed in the majority (85.29%), as the PAS-predominant indication profile (involving the lower uterine segment and cervix) necessitated removal of the entire uterus for adequate haemostasis. The mean estimated blood loss of 2520.59±686.13 mL (range 1600–4500 mL) underscores the severity of haemorrhage. Intraoperative complications occurred in 70.59% of cases, with PPH/intractable bleeding (52.94%) and bladder injury (8.82%) being the most common. Importantly, conservative measures were attempted in virtually all cases before proceeding to EOH (uterotonics 97.06%, uterine massage 64.70%, B-Lynch/UAL 29.41% each, balloon tamponade 23.53%), confirming that EOH was performed as a true last resort.

Table 4: Blood Transfusion, ICU Admission, and Hospital Stay (n=34)

Parameter	Value	Additional
Blood Products Transfused (Mean±SD units)		
Packed RBCs	3.82±1.78	Range 2–10
Fresh Frozen Plasma	3.44±1.50	Range 2–8
Platelet Concentrates	0.85±0.82	Range 0–3
Cryoprecipitate	0.41±0.66	Range 0–2
Massive Transfusion Protocol	09 (26.47%)	
Total Transfusion Required	34 (100.00%)	
ICU and Ventilatory Support		
ICU Admission	24 (70.59%)	
ICU Stay (Mean±SD)	3.21±1.84 days	Range 1–8
Ventilatory Support	09 (26.47%)	
Hospital Stay		
4–7 days	27 (79.41%)	Mean 6.35±2.41
8–10 days	06 (17.65%)	

All 34 patients (100%) required blood product transfusion, with a mean of 3.82±1.78 units of packed RBCs and 3.44±1.50 units of FFP. Massive transfusion protocol (MTP) was activated in 26.47% (9/34) of cases, reflecting life-threatening haemorrhage. ICU admission was required in 70.59% (24/34) with a mean ICU stay of 3.21±1.84 days, and 26.47% required ventilatory support. The mean total

hospital stay was 6.35±2.41 days, with 79.41% discharged within 7 days. These figures underscore the significant morbidity burden associated with EOH and the need for tertiary-level infrastructure including blood bank, ICU, and multidisciplinary teams.

Table 5: Postoperative Complications and Maternal Outcome (n=34)

Parameter	n	Percentage (%)
Postoperative Complications*		
Postoperative Pyrexia	21	61.76
Wound Infection	07	20.59
Acute Kidney Injury	05	14.71
Disseminated Intravascular Coagulation	04	11.76
Sepsis	03	08.82
ARDS	01	02.94
MODS	01	02.94
Maternal Outcome		
Survived — Discharged	33	97.06
Maternal Death	01	02.94

Postoperative complications occurred in 64.71% of patients, with pyrexia being the most common (61.76%, 21/34), followed by wound infection (20.59%), acute kidney injury (14.71%), and DIC (11.76%). One maternal death occurred (2.94%, 1/34)—a 25-year-old primigravida with severe anaemia (Hb 5.8 g/dL), placenta percreta, absent antenatal care, referred from a primary health centre in a state of haemorrhagic shock, who developed irreversible DIC and multiorgan dysfunction despite maximum resuscitation. The case fatality rate of 2.94% is comparable to the global pooled CFR of 3.2% reported by Kallianidis et al. and underscores that timely referral, adequate blood banking, and institutional preparedness are critical determinants of survival.

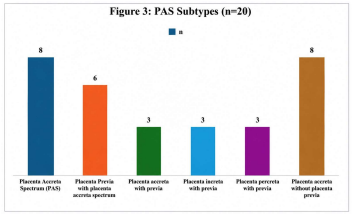


Table 6: Fetal and Neonatal Outcome (n=34)

Parameter	n	Percentage (%)
Live Birth — Healthy	12	35.29
Live Birth — NICU	17	50.00
Intrauterine Fetal Death	03	08.82
Neonatal Death	01	02.94
Not Applicable (Scar Ectopic)	01	02.94
Neonatal Parameters		
Mean Birth Weight (g)	2384.85±530.99	
Mean Apgar 1 min / 5 min	5.88 / 7.00	
NICU Admission	19 (55.88%)	
NICU Indications (n=19)		
Prematurity	07 (36.84%)	
Low Birth Weight	06 (31.58%)	
Birth Asphyxia	04 (21.05%)	
RDS	02 (10.53%)	
Perinatal Mortality		
Total Perinatal Deaths	04	11.76

Live births occurred in 87.88% of viable pregnancies (29/33, excluding scar ectopic). NICU admission was required in 55.88% (19/34), predominantly for prematurity (36.84%) and low birth weight (31.58%)—reflecting the emergency nature of deliveries, frequently at preterm gestational ages (52.94% delivered before 37 weeks). The mean birth weight of 2384.85±530.99 g and mean Apgar scores of 5.88 (1 min) / 7.00 (5 min) indicate moderate

neonatal compromise. Perinatal mortality was 11.76% (4/34)—comprising 3 IUFDs and 1 neonatal death—lower than several published series (Chawla et al. 37.5%, Mundhra et al. 30%), likely reflecting improved neonatal intensive care at our tertiary centre.

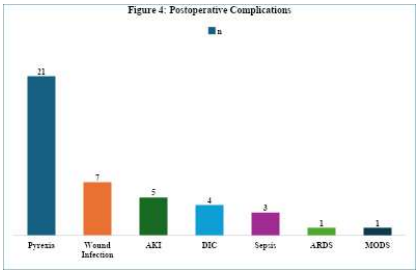
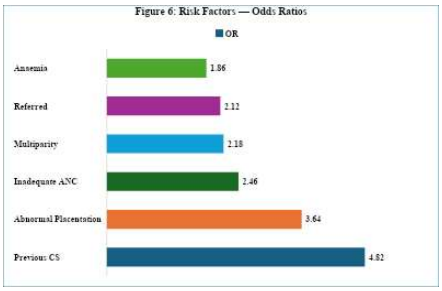


Table 7: Risk Factors Associated with EOH — Logistic Regression Analysis (n=34)

Risk Factor	n	Prevalence (%)	OR (95% CI)	p-value
Previous Caesarean Section	29	85.29	4.82 (2.14–10.86)	<0.001*
Abnormal Placentation	21	61.76	3.64 (1.62–8.18)	<0.01*
Inadequate / No ANC	20	58.82	2.46 (1.12–5.40)	0.02*
Multiparity (≥P2)	19	55.88	2.18 (1.04–4.58)	0.04*
Referred from Periphery	18	52.94	2.12 (0.98–4.56)	0.06 (NS)
Anaemia (Hb <10 g/dL)	08	23.53	1.86 (0.72–4.82)	0.20 (NS)

Logistic regression analysis identified four statistically significant independent risk factors for EOH: previous CS (OR=4.82, 95% CI 2.14–10.86, p<0.001)—the strongest predictor—followed by abnormal placentation (OR=3.64, 95% CI 1.62–8.18, p<0.01), inadequate/absent ANC (OR=2.46, 95% CI 1.12–5.40, p=0.02), and multiparity (OR=2.18, 95% CI 1.04–4.58, p=0.04). Referral from peripheral centres and anaemia showed trends towards significance but did not reach the threshold (p=0.06 and p=0.20 respectively). The triad of previous CS + abnormal placentation + inadequate ANC constitutes the most significant risk constellation, and all three are potentially modifiable through improved obstetric practices.



DISCUSSION

This 10-year observational study of 34 consecutive cases of emergency obstetric hysterectomy at MGMC&H, Jaipur, offers comprehensive insights into the evolving epidemiology of EOH in an Indian tertiary care setting. The key findings—an incidence of 0.97 per 1,000 deliveries, the predominance of placenta accreta spectrum (PAS) at 58.82% over uterine atony (26.47%), previous caesarean section as the strongest independent risk factor (OR=4.82, p<0.001), a maternal mortality of 2.94% (1/34), and a perinatal mortality of 11.76% (4/34)—are interpreted in the context of contemporary national and international evidence.

Incidence of Emergency Obstetric Hysterectomy

The incidence of EOH in the present study was 0.97 per 1,000 deliveries (34/34,937), consistent with the figure reported by Chawla et al.[7] (0.83 per 1,000; Kasturba Hospital, New Delhi) and approximates the global pooled incidence of 1.1 per 1,000 reported by Kallianidis et al.[5] in their landmark 2023 systematic review and meta-analysis (128 studies, 58 million births). Tahmina et al.[22] from South India reported a modestly higher incidence of 1.5 per 1,000 deliveries. A substantially higher rate of 5.94 per 1,000 was documented by Verma et al.[8] from Meerut, likely reflecting a disproportionately higher burden of complicated referrals at that centre. In contrast, high-income countries report appreciably lower incidences: Pettersen et al.[13] from Norway recorded 0.4 per 1,000, and Yannam et al.[23] from Chennai reported 0.11 per 1,000. These inter-institutional and international disparities are attributable to differences in obstetric care infrastructure, caesarean section rates, and patterns of peripheral referral.

Demographics and Socio-Obstetric Profile

The mean age of 29.15±4.02 years, with the majority of patients aged 26–30 years (44.12%), is consistent with observations by R B and R J[24] (42.9% in the same

age group) and Kazi[25] (mean 30.0±5.2 years). The predominance of rural residence (73.53%), lower socioeconomic status (67.65%), and unbooked or referred cases (85.29%) is well corroborated by comparable Indian studies: Verma et al.[8] (93.5% unbooked), Singh A et al.[17] (71%), Chawla et al.[7] (71.1%), and Mohapatra et al.[26] (79%). The critical role of absent antenatal care in adversely influencing outcomes is further underscored by Abdou et al.[19] from Niger, who reported 80% unbooked status and a corresponding maternal mortality of 16.1%—demonstrating that inadequate antenatal surveillance substantially worsens clinical outcomes in EOH.

Previous Caesarean Section — The Dominant Risk Factor

A history of previous caesarean section was identified in 85.29% (29/34) of patients, establishing it as the single strongest independent risk factor for EOH in this cohort (OR=4.82, 95% CI 2.14–10.86, p<0.001). This finding is consistent with those of Gica et al.[14] (74.2% prior CS, Romania), Ashok Kumar et al.[27] (60%), and the global meta-analysis by Kallianidis et al.[5] which identified prior CS as the most significant risk indicator worldwide. The WOMAN trial analysis by Huque et al.[18] (20,060 women) further established that caesarean delivery confers a 10-fold increased risk of peripartum hysterectomy. The exceptionally high prevalence of prior CS in the present study (85.29%) reflects the rapidly escalating CS rate in Rajasthan, consistent with national trends documented by Pandey et al.[12] The well-established exponential relationship between successive CS and PAS risk—rising from 3.3% after one CS to 6.74% after five or more[9–11]—underscores that curtailing unnecessary primary caesarean sections represents the most impactful single preventive strategy for reducing EOH.

Indications — The PAS Paradigm Shift

The emergence of PAS as the leading indication for EOH (58.82%) in the present study represents a well-documented epidemiological transition, concordant with Gica et al.[14] (51.6%), Fang et al.[15] (49.6%), Kumari et al.[29] (46.4%), Kalyankar et al.[30] (39.1%), and the global pooled estimate of 38.0% from the Kallianidis et al.[5] meta-analysis. Series in which uterine atony remains predominant—such as Chawla et al.[7] (25%), Mundhra et al.[16] (45.87%), and Singh A et al.[17] (38.1%)—likely reflect distinct referral profiles with higher proportions of unbooked patients presenting following unmonitored home deliveries. In sub-Saharan African settings, uterine rupture has remained the dominant indication, as illustrated by Sium et al.[32] (47.6%) and Abdou et al.[19] (52.9%), reflecting the persistent burden of obstructed labour in resource-limited settings. The findings of the present study confirm that the epidemiological transition in EOH indications—from atony towards PAS—is well underway in the Indian tertiary care context.

Intraoperative and Postoperative Outcomes

The mean estimated blood loss of 2520.59±686.13 mL, combined with universal transfusion requirement (100%), activation of massive transfusion protocol in 26.47% of cases, and ICU admission in 70.59%, collectively attest to the haemorrhagic severity characteristic of EOH. The predominance of total hysterectomy (85.29%) over subtotal hysterectomy reflects the frequent involvement of the lower uterine segment in PAS-related pathology, necessitating complete uterine excision for definitive haemostasis. This contrasts with the preferences reported by Tahmina et al.[22] (subtotal preferred in 71%) and Kumari et al.[29] (subtotal in 96.6%), where atony-predominant cohorts permitted cervical conservation. The intraoperative bladder injury rate of 8.82% is consistent with rates reported by Mundhra et al.[16] (6.7%), Gica et al.[14] (9.7%), and Pettersen et al.[13] (8.6%), and is an expected sequela of the dense adhesive and invasive anatomy associated with PAS. The postoperative pyrexia rate of 61.76% exceeded the 29.7% reported in the Kallianidis et al.[5] meta-analysis, likely attributable to the magnitude of haemorrhage, prolonged operative duration, and the cumulative immunosuppressive effect of massive transfusion in this cohort.

Maternal and Perinatal Mortality

The maternal mortality rate of 2.94% (1/34) is consistent with the global pooled case fatality rate of 3.2% reported by Kallianidis et al.[5] and compares favourably with higher rates documented in other series, including Chawla et al.[7] (17.7%), Mbakwa et al.[33] (13.5%), Abdou et al.[19] (16.1%), Singh A et al.[17] (9.5%), and Mundhra et al.[16] (5.15%). Similarly, the perinatal mortality of 11.76% was lower than that reported by Chawla et al.[7] (37.5%) and Mundhra et al.[16] (30%), likely attributable to the availability of advanced neonatal intensive care at our centre. The single maternal fatality in this series—a 25-year-old primigravida with severe anaemia (Hb 5.8 g/dL), placenta percreta, absent antenatal surveillance, and delayed referral in haemorrhagic shock who developed irreversible DIC and multiorgan dysfunction—exemplifies the lethal constellation of preventable risk factors and reinforces that timely referral, adequate blood bank infrastructure, and institutional preparedness are decisive determinants of survival.

Risk Factor Analysis and Clinical Implications

The four statistically significant independent risk factors identified in this study—previous CS (OR=4.82), abnormal placentation (OR=3.64), inadequate or absent antenatal care (OR=2.46), and multiparity (OR=2.18)—are in close agreement with findings from the Huque et al.[18] WOMAN trial analysis and the Kallianidis et al.[5] global meta-analysis. These data reinforce three principal clinical imperatives: (1) reduction of unnecessary primary caesarean sections in accordance with FIGO recommendations[20]; (2) systematic antenatal ultrasonographic screening for PAS in all women with a prior caesarean scar, in alignment with ACOG Obstetric Care Consensus guidelines[11]; and (3) timely referral to centres with multidisciplinary surgical and critical care capability. Beyond the acute surgical episode, the long-term morbidity associated with peripartum hysterectomy warrants recognition: Ravi et al.[34] documented significant impairment in health-related quality of life following the procedure, while Jayawardane et al.[21] reported substantial long-term psychological sequelae, including post-traumatic stress disorder and depression, underscoring the imperative for structured post-operative psychological support and counselling services for survivors.

CONCLUSION

Placenta accreta spectrum has emerged as the predominant indication for emergency obstetric hysterectomy at our centre (58.82%), surpassing the traditional predominance of uterine atony (26.47%), directly linked to the rising caesarean section rate. Previous CS is the strongest independent risk factor (OR=4.82, $p<0.001$), followed by abnormal placentation (OR=3.64), inadequate ANC (OR=2.46), and multiparity (OR=2.18). The maternal mortality of 2.94% and perinatal mortality of 11.76% are comparable to global benchmarks. Reducing unnecessary primary caesarean sections, enhancing antenatal PAS screening with ultrasonography in all women with previous CS, ensuring timely referral to tertiary centres with multidisciplinary teams and blood bank support, and maintaining institutional readiness with massive transfusion protocols are essential strategies to reduce the incidence, morbidity, and mortality associated with emergency obstetric hysterectomy.

LIMITATIONS

1. Small sample size (n=34) inherent to the rarity of EOH; limits statistical power for subgroup analyses.
2. Single-centre study from a tertiary referral centre; may not be generalisable to primary/secondary care settings.
3. Retrospective component with inherent limitations of medical record review.
4. Long-term follow-up and psychological outcomes were not assessed.

DECLARATIONS

Ethics Approval: Approved by the Institutional Ethics Committee (IEC), MGMC&H, Jaipur. Written informed consent obtained for prospective cases. Conducted per Declaration of Helsinki and ICMR guidelines.

Conflict of Interest: None declared.

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