ORIGINAL ARTICLE https://doi.org/10.3329/jmcwh.v22i2.90639

ECTOPIC PREGNANCY: A CLINICAL, DEMOGRAPHIC, AND RISK FACTOR ANALYSIS IN A TERTIARY CARE HOSPITAL

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Received: 08.11.2025
Accepted: 09.06.2026
Published: July 2026

Cite this article:
Flora TJ, Ahmed N, Ahmad R, Begum H, Shamsuddoha N, Yasmin S, Islam RN. Ectopic Pregnancy: A Clinical, Demographic, and Risk Factor Analysis in a Tertiary Care Hospital. J Med Coll Women Hosp.2026;22(2): 25-30.

ABSTRACT

Background: Ectopic pregnancy remains a major cause of maternal morbidity and mortality in developing countries. Rupture of an ectopic pregnancy remains the most dreaded complication of a pregnancy related event. It occurs when a fertilized ovum implants outside the uterine cavity, most commonly in the fallopian tube. **Objective:** To analyze the sociodemographic characteristics, clinical presentations and predisposing factors of ectopic pregnancy at a tertiary care hospital. **Materials and Method:** This cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital, from November 2021 to May 2022. A total of 62 women diagnosed with ectopic pregnancy were included. **Results:** The mean age was 27.4±4.2 years, with most patients (43.5%) aged 26–30 years. Most of the patients were nulliparous 17(28%). Previous pelvic surgery was the most common risk factor (13%). Abdominal pain and amenorrhea were universal symptoms, while 82% presented with pervaginal bleeding. The ampullary region was the commonest site (77%), with right-sided predominance (56%). Salpingectomy was performed in 82%. **Conclusion:** Ectopic pregnancy predominantly presents in acute, ruptured form, mostly occurring at late twenties, in nulliparous women. So, early diagnosis and prompt management are essential to prevent mortality, morbidity and preserve fertility.

Keywords: Ectopic pregnancy, Sociodemographic characteristics, Clinical presentation, Tubal pregnancy, Haemoperitoneum, Salpingectomy.

INTRODUCTION

Ectopic pregnancy (EP) is a critical obstetric emergency and a leading cause of maternal morbidity and mortality during the first trimester, particularly in low-resource settings[1]. It is defined by the implantation of a fertilized ovum outside the endometrial cavity, with over 95% of cases occurring in the fallopian tube [2]. Globally, the incidence of ectopic pregnancy has been on the rise, attributed to factors such as increased rates of Pelvic Inflammatory Disease (PID), a history of pelvic surgeries, the use of assisted reproductive technologies (ART), and smoking[3,4].

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The clinical presentation of ectopic pregnancy can be variable, often creating a diagnostic challenge. The classic triad of amenorrhea, abdominal pain, and vaginal bleeding is suggestive but not universally present. Patients may also present with a range of clinical signs including abdominal tenderness, pallor, tachycardia, and hypotension, which often indicate a more advanced or ruptured state[517]. In many low- and middle-income countries like Bangladesh, patients frequently present late, often with rupture and haemodynamic instability even in a state of shock, turning a manageable condition into a life-threatening surgical emergency [6].

This late presentation underscores critical gaps in primary healthcare, including delayed access to transvaginal ultrasonography and serum beta-human chorionic gonadotropin (β-hCG) monitoring, which are cornerstones of early diagnosis[7]. Often it is difficult to make patients with ectopic pregnancy understand how serious and life threatening their condition truly is. So, proper counselling is also necessary to start treatment and to reduce morbidity.

Well-established risk factors include a history of PID, previous ectopic pregnancy, tubal surgery, infertility, and easy access to use emergency contraceptive pills[8]. However, a significant proportion of cases occur in women without any identifiable risk factors, highlighting the need for a high index of suspicion in all women of reproductive age presenting with abdominal pain[9]. This study was therefore undertaken to assess the sociodemographic profile, risk factors, and clinical presentations of ectopic pregnancy at a tertiary care hospital in Dhaka, Bangladesh, to inform local clinical practice and public health strategies.

MATERIALS AND METHOD

Study Design and Setting: This cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Dhaka Medical College Hospital, Dhaka, from 15th November 2021 to 14th May 2022.

Study Population: Sixty-two women diagnosed with ectopic pregnancy based on clinical and ultrasonographic findings were enrolled through purposive sampling.

Inclusion Criteria: Women of reproductive age who were clinically or sonographically diagnosed with ectopic pregnancy.

Exclusion Criteria: Women with intrauterine pregnancies or those not confirmed surgically.

Data Collection: The study was approved by the institutional ethical committee and informed consent was obtained from all participating women.After proper informed consent, patients who are sonographically and clinically suspected as having ectopic pregnancy were interviewed for sociodemographic characteristics and clinical characteristics and about risk factors. Laboratory findings and peroperative findings were recorded from patient's chart. Data were collected on sociodemographic characteristics, clinical symptoms and examination findings using a structured questionnaire.

Data Analysis: Data were analyzed using SPSS version 23. Descriptive statistics (mean, SD, frequencies, and percentages) were calculated. $p<0.05$ was considered statistically significant.

Ethical Considerations: Ethical approval was obtained from the Institutional Review Board of Dhaka Medical College Hospital. Confidentiality and patient autonomy were maintained throughout the study (Ethical clearance memo no. ERC-DMC/ECC/2021/230)

RESULTS

The prevalence of tubal pregnancy at Dhaka Medical College Hospital during the study period was 20.1 per 1,000 pregnancies.

Table 1 shows that among the 62 cases, the majority (43.5%) were aged 26–30 years, with a mean age of 27.4±4.2 years. Most of them were nulliparous, 17 (28%). Most patients (56.5%) belonged to middle-income families.

Table 1: Socio-demographic Characteristics of the Study Population

Parameter	Frequency	Percentage (%)
≤25 years	25	40.3
26–30 years	27	43.5
31–35 years	10	16.2
Socio-economic status		
Middle-income family	35	56.5
Lower-income family	27	43.5
Parity(P)		
P-0	17	28%
P-1	15	24%
P-2	11	18%
P-3	10	16%
P-4	6	10%
P>5	3	4

Figure 1 shows all patients had history of amenorrhoea and abdominal pain, while 82% patients had pervaginal bleeding

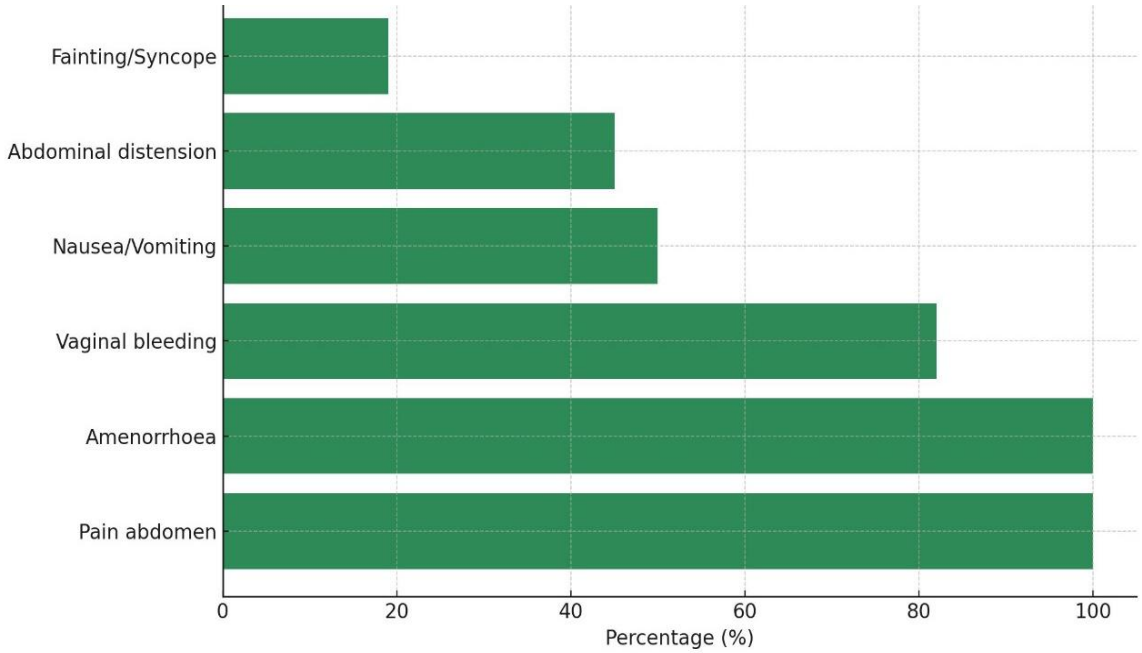

Figure-1: Clinical presentations of Ectopic pregnancy

Table 2 shows, pallor was present in 45% of the cases, 14% presented with shock, 40% had tachycardia, 39% were with hypotension and 86% patient were hemodynamically stable. On abdominal examination, the common presentation was tenderness in 84% followed by distension in 29% and muscle guarding in 14% patients.

Table 2: Clinical sign of the patients (n=62)

Clinical sign	Frequency	Percentage
Pallor	28	45
Shock	9	14
Tender abdomen	52	84
Abdominal distension	18	29
Muscle guarding	9	14
Tachycardia	25	40
Hypotension	24	39

n=number of subjects

Table 3 shows that 50% of the patients had identifiable risk factors of which 13 % patients had previous history of pelvic surgery like appendicitis, lower uterine caesarean section (LUCS) etc, 5% had history of PID, 6% had history of abortion or menstrual regulation (MR), 6% had history of use of intrauterine contraceptive device (IUCD) and 6% had history of infertility. The association of other risk factors was history of tubal ligation in 3%, history of taking emergency contraceptive pills in 3%, history of tuberculosis in 2%, history of previous ectopic pregnancy in 5% of cases.

Table 3: Evaluation of predisposing factors of ectopic pregnancy(n=62)

Predisposing factors	Frequency	Percentage%
Pelvic inflammatory disease	3	5
Use of IUCD	4	6
Use of emergency contraceptive pills	2	3
History of tuberculosis	1	2
History of abortion or MR	4	6
Infertility	4	6
Previous pelvic surgery like appendisectomy, LUCS	8	13
History of tubal abortion	2	3
Previous ectopic pregnancy	3	5
Unknown factors	31	50

n=number of subjects

DISCUSSION

The findings of this study provide a contemporary snapshot of ectopic pregnancy in an urban tertiary care setting in Bangladesh, aligning with and expanding upon existing national and international literature. The demographic profile, with a mean age of 27.4 years and a predominance of women in the 26-30-year age group, is consistent with the study by Nahar et al. in Bangladesh and Prasannaet al in India [3,10]. This is the age group who are highly fertile among women, but the occurrence of ectopic pregnancy may affect the reproductive health in the future. A large part of the nulliparous women (55%) were found to suffer from ectopic pregnancy which is alarming as this condition poses negative impact on fertility. A large scale study conducted by Barnhart et al observed similar trend[11].

The high prevalence of abdominal tenderness (84%), pallor (45%), tachycardia (40%), and hypotension (39%) indicates that a significant number of patients presented with advanced, often ruptured, ectopic pregnancies accompanied by significant haemoperitoneum[517]. Among the patients 50% exhibited no predisposing risk factors which further indicates that all women of reproductive age are at risk of developing this threatening condition[9]. In cases where

factors were identified, previous pelvic surgery (13%) was noted as the most common, which is consistent with previous research that identified iatrogenic adhesions and tubal damage causing significant alterations to tubal function[8]. Other notable factors included the use of IUCDs (6%) and a history of infertility (6%), both of which are well-established in the literature[4,8.]

Clinically, the presence of abdominal pain and amenorrhea, along with vaginal bleeding in 82% of cases, reflects the classic symptomatic triad [125]. However, the high rate of surgical intervention, with salpingectomy performed in 82% of cases, is a critical indicator of delayed diagnosis and advanced disease at presentation. This contrasts sharply with high-income settings, where the widespread use of transvaginal ultrasound and serial β-hCG allows for early detection and a greater application of medical management with methotrexate or fertility-preserving tubetomy[7,13]. The high salpingectomy rate observed here is comparable to other studies from similar studies performed in resource constrained settings [6,14], highlighting a systemic issue of late healthcare-seeking behavior and limited access to early diagnostic tools.

The anatomical findings of our study, with a right-sided (56%) and ampullary (77%) predominance, are consistent with established embryological and physiological principles, as the ampulla is the longest and most common site for fertilization[2,15]. The association of severe haemoperitoneum with a history of previous pelvic surgery (13%) underscores the role of iatrogenic adhesions and tubal damage as a significant risk factor. This aligns with studies by Ankum et al., which identified previous abdominal surgery as a modifier of tubal function [8].

To mitigate the high morbidity associated with ruptured ectopic pregnancy, a multi-pronged approach is necessary. This includes enhancing public awareness about the symptoms of early pregnancy complications, promoting early antenatal registration, and implementing routine screening for high-risk women [16]. Furthermore, establishing dedicated early pregnancy assessment units (EPAUs) at the district hospital level, equipped with ultrasonography and rapid β-hCG testing, could facilitate timely diagnosis and triage, thereby reducing the number of women presenting in a critical condition[7,17].

CONCLUSION

Ectopic pregnancy, a nightmare, remains a significant cause of maternal morbidity in Bangladesh. Most patients present with acute, ruptured ectopic pregnancies, often requiring salpingectomy. Early diagnosis, patient education, and improved access to transvaginal ultrasonography and emergency obstetric services are essential to reduce morbidity and mortality.

CONFLICT OF INTEREST

There is no conflict of interest.

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