



Original Article



Clinical Profiles, Risk Factors and Management Outcomes of Ectopic Pregnancy attended at a Tertiary Care Hospital in Bangladesh

Mosammad Tanbir Nahar Shamima¹, Sheuly Begum², Tahmina Khanum³, Monowara Begum⁴,
Mohammad Ahsan Habibur Rahman⁵

¹Assistant Professor, Department of Obstetrics & Gynaecology, Enam Medical College Hospital, Savar, Dhaka, Bangladesh;

²Professor and Head, Department of Obstetrics & Gynaecology, Enam Medical College Hospital, Savar, Dhaka, Bangladesh;

³Associate Professor, Department of Obstetrics & Gynaecology, Enam Medical College Hospital, Savar, Dhaka, Bangladesh;

⁴Assistant Professor, Department of Obstetrics & Gynaecology, Enam Medical College Hospital, Savar, Dhaka, Bangladesh;

⁵Assistant Professor, Department of Cardiac Anaesthesia, Ibrahim Cardiac Hospital & Research Institute, Dhaka, Bangladesh

Abstract

Background: Ectopic pregnancy is a potentially life-threatening condition in which the fertilized ovum implants outside the uterine cavity. Early identification of risk factors and prompt management are essential to prevent complications and preserve fertility. **Objective:** The main objective of the study was to evaluate the risk factors, and management outcomes of ectopic pregnancy. **Methodology:** A prospective descriptive study was conducted in Department of Obstetrics & Gynaecology, Enam Medical College Hospital, Dhaka, from July 2023 to December 2023. Fifty ectopic pregnancies were included, while patients with acute abdomen due to tumors, infections, or cysts were excluded. Diagnosis was based on history, clinical examination, laboratory investigations, ultrasonography, and confirmed by laparotomy or laparoscopy. Data on demographics, parity, clinical features, risk factors, diagnostic tests, and management were collected using a structured questionnaire and analyzed using SPSS version 25. **Results:** The majority were aged 26–30 years (34%), followed by 21–25 years (28%). Amenorrhea was the most frequent symptom (98%), followed by vaginal bleeding (92%) and abdominal pain (90%), while fainting attacks were rare (6%). Most women were multiparous (58%), and the majority of pregnancies were spontaneous. The most common risk factors were previous cesarean section (40%), history of infertility (26%), and history of abortion (26%). Surgical management was performed in 84% of cases, and medical management in 16%. β -hCG testing was significantly associated with medical management (62.5% vs. 14.3% in surgical cases, $p=0.003$), and amenorrhea was significantly more common in surgically managed patients ($p=0.021$). No significant associations were found between management type and abdominal pain, vaginal bleeding, or fainting attack. **Conclusion:** Ectopic pregnancy predominantly affects multiparous women of reproductive age, with previous cesarean section, infertility, and abortion as major risk factors, highlighting the importance of early recognition, appropriate use of β -hCG for patient selection, and timely medical or surgical intervention to reduce morbidity and improve clinical outcomes. [Journal of Current and Advance Medical Research, January 2025;12(1):37-43]

Keyword: Ectopic pregnancy; risk factors; cesarean section; infertility; surgical management; β -hCG

Correspondence: Dr. Mosammad Tanbir Nahar Shamima, Assistant Professor of Obstetrics & Gynaecology, Enam Medical College Hospital, Savar, Dhaka, Bangladesh; **Email:** tanahar@yahoo.com, **Cell No.:** +8801817-513052; **ORCID:** <https://orcid.org/0009-0008-5495-6960>

©Authors 2025. CC-BY-NC

Introduction

Ectopic pregnancy refers to a pregnancy that occurs outside the uterine cavity. The term "ectopic" originates from the Greek word meaning "out of place" or "displaced." It is a critical medical emergency that poses a significant risk to a patient's life. The condition is particularly concerning due to its potential for causing mortality and reducing future fertility¹⁻². Over recent decades, the incidence of ectopic pregnancies has risen dramatically, approaching levels comparable to an epidemic. It is now recognized as one of the most common acute abdominal emergencies²⁻⁴.

The majority of ectopic pregnancies occur in the fallopian tube (95.0% to 98.0% of cases), with specific locations including the ampullary region (55.0%), isthmic region (25.0%), fimbrial region (17.0%), and interstitial region (2.0%). Ectopic pregnancies can also develop in other sites such as the uterine cornua (22.5%), ovary, cervix, and abdominal cavity³⁻⁴. They are more frequently observed on the right side. Although rare, ectopic pregnancies can occur alongside an intrauterine pregnancy, a condition known as heterotopic pregnancy. This condition can occur at any time from menarche to menopause, with studies indicating that 75.0% of cases occur in women aged 20 to 30 years^{4,7}.

Several factors contribute to the increased risk of ectopic pregnancy. A significant rise in incidence is closely linked to the higher rates of pelvic inflammatory disease (PID), with the risk of tubal damage escalating after multiple episodes of PID. A history of prior ectopic pregnancy increases the risk by 7 to 13 times. Other risk factors include previous tubal surgery, conception following tubal ligation, the use of fertility drugs or assisted reproductive technology (4-fold increase), and the use of intrauterine devices (3.0% to 4.0% risk). Additionally, smoking, sexually transmitted diseases (STDs), and maternal age between 35 to 44 years are associated with a 3- to 4-fold increased risk^{1,3,8}.

Diagnosis of ectopic pregnancy involves physical examination, transvaginal ultrasound, serum HCG measurement, and diagnostic laparoscopy. Physical findings may appear normal before a rupture occurs. In cases of ruptured ectopic pregnancy, symptoms can include hypotension and tachycardia due to hypovolemia, with sudden pallor being a key indicator. Abdominal examination may reveal tenderness, a slightly enlarged uterus, and shifting dullness. Cervical movement tenderness may be

detected during a per vaginal (P/V) examination. HCG measurement is central to both diagnosis and management, as the HCG level typically doubles by more than 66.0% over 48 hours in intrauterine pregnancies. However, in about 15.0% of ectopic pregnancies, the HCG rise can exceed 66.0% over 48 hours, while in 15.0% of normal pregnancies, it may be less than 66.0% cases^{1,4,7}.

Transvaginal ultrasound is a key diagnostic tool for identifying ectopic pregnancies. The most specific signs include an empty uterus, the presence of an adnexal mass, hemoperitoneum, and visualization of a gestational sac, fetal pole, or cardiac activity within the adnexa^{1,5-7}. Transvaginal sonography can detect an adnexal ring in 38.0% of cases, while transabdominal sonography can identify it in 22.0% of cases^{1,4,8}.

The treatment options for ectopic pregnancy include expectant management, medical treatment, and surgical intervention. Expectant management is appropriate only for asymptomatic women diagnosed with ectopic pregnancy via ultrasound, who present with decreasing hCG levels below 1000 IU/L and less than 100 mL of fluid in the pouch of Douglas^{2,5,9}. Unruptured ectopic pregnancies can be managed through surgery, medication, or careful observation. However, surgical intervention is often necessary in most cases due to the risk of life-threatening intraperitoneal hemorrhage^{3,7,10,11}. Given that ectopic pregnancy poses a significant health concern for women of reproductive age, this study aimed to evaluate the risk factors, clinical presentation, and management strategies for ectopic pregnancy.

Methodology

Study Settings and Population: This prospective descriptive study was conducted in Department of Obstetrics & Gynaecology, Enam Medical College Hospital, Dhaka, from January 2023 to June 2023. Clinically suspicious of ectopic pregnancy cases were included. A total of 50 samples were included in the study. Clinically suspicious of ectopic pregnancy were included. Acute abdomen due to tumour, infection and cyst were excluded.

Study Procedure: Patients were diagnosed from history, clinical examination, and laboratory investigation. A pregnancy test and ultrasonography were performed in most cases to support the clinical diagnosis. Haemoglobin estimation and blood grouping were done in all cases. Finally,

laparotomy was done to confirm the diagnosis and manage the case. Histopathological confirmation was done in some cases.

Clinical Examination: The clinical variables recorded in the study included patient demographics such as age and parity, clinical presentation including abdominal pain, amenorrhea, and abnormal vaginal bleeding, as well as physical examination findings like adnexal tenderness and mass. Risk factors such as a history of pelvic inflammatory disease, previous abortions, prior surgeries, use of intrauterine contraceptive devices, infertility treatments, and previous ectopic pregnancies were also noted. Diagnostic findings included results from urine pregnancy tests, ultrasound scans, and culdocentesis.

Management Profiles: The management of ectopic pregnancies primarily involved surgical interventions, with a minority of cases receiving medical treatment. The predominant surgical procedure performed was salpingectomy and salpingo-oophorectomy. The choice between these surgical options depended on intraoperative findings and the extent of damage caused by the ectopic pregnancy. Medical management was considered for select patients presenting early with unruptured ectopic pregnancies and stable hemodynamic status.

Follow Up and Outcomes Measures: The study does not explicitly detail the follow-up period or the specific variables recorded during follow-up. However, it reports that no maternal mortality occurred in this series. Follow-up periods and outcome measures have varied. Patients for a specific duration to monitor variables such as the resolution of β -hCG levels, time taken for complete β -hCG resolution, and any adverse effects or complications arising from the treatment modality employed. Additionally, a study on the safety and efficacy of methotrexate in unruptured ectopic pregnancies observed patients until complete β -hCG resolution. In the absence of specific follow-up details from the Bangladeshi study, it is reasonable to infer that standard postoperative follow-up protocols were employed, focusing on monitoring for complications, ensuring the resolution of β -hCG levels, and assessing the overall recovery and reproductive health of the patients. The outcome measures were the incidence of ruptured ectopic, the need of blood transfusion in the ruptured cases and mortality. The patients were monitored and the details were recorded till the time of discharge from the hospital or death. No further follow-up of the patients was done after discharge.

Statistical Analysis: Data were collected using a structured questionnaire, which encompassed all relevant variables. The questionnaire was finalized after pre-testing and obtaining informed consent from eligible patients. Patient details were gathered from medical histories, admission records, and physical examinations, and any complications were assessed. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows version 25.

Ethical Consideration: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration 2013) and also with the ethical guidelines of the Institutional research ethics. Formal ethics approval was granted by the local ethics committee. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results

The majority of the study participants (34.0%) were aged between 26 to 30 years, followed by 28.0% in the 21 to 25 years age group. Only 2.0% were between 41 to 45 years, indicating that most ectopic pregnancies occurred in women of reproductive age, particularly in their late twenties. Regarding parity, two-thirds (66.0%) of the subjects were multiparous, while 34.0% were nulliparous. The majority of ectopic pregnancies (72.0%) occurred at a gestational age of 6 to 7 weeks, followed by 20.0% between 8 to 9 weeks, suggesting that most cases were diagnosed early in pregnancy (Table 1).

Table 1: Sociodemographic Characteristics of the Study Subject (n=50)

Characteristics	Frequency	Percent
Age Group		
• ≤ 20 Years	6	12.0
• 21 to 25 Years	14	28.0
• 26 to 30 Years	17	34.0
• 31 to 35 Years	8	16.0
• 36 to 40 Years	3	6.0
• 41 to 45 Years	2	2.0
Parity		
• Nulliparous	17	34.0
• Multiparous	33	66.0
Gestational age		

Characteristics	Frequency	Percent
• 6 to 7 weeks	36	72.0
• 8 to 9 weeks	10	10.0
• 10 to 11 weeks	3	6.0
• ≥ 12 weeks	1	2.0

Infertility and previous abortion were the most common risk factors, each accounting for 22% of cases. Emergency contraceptive pill use was noted in 18%, while pelvic inflammatory disease (PID) was reported in 10%. Previous history of ectopic pregnancy was found in 8% of cases, and both oral contraceptive failure and tubal ligation contributed 4% each. A small proportion (2%) conceived through assisted reproductive techniques (ART), and 10% had no identifiable risk factors (Table 2).

Table 2: Risk Factor of Ectopic Pregnancy among the Study Population (n=50)

Risk factors	Frequency	Percent
PID	5	10.0
P/H/O Ectopic Pregnancy	4	8.0
Infertility	11	22.0
Abortion	11	22.0
Emergency pill	9	18.0
OCP Failure	2	4.0
Tubal Ligation	2	4.0
ART	1	2.0
No risk	5	10.0

P/H/O = Previous History of; PID = Pelvic Inflammatory Disease; OCP = Oral Contraceptive Pill; ART= Artificial Reproductive Technology

Most conceptions (80.0%) were spontaneous, whereas 20.0% were induced, indicating that ectopic pregnancy was more prevalent among those with natural conception. Surgical management was the predominant treatment modality (90.0%), with only 10% managed medically. Most patients presented with conditions requiring surgical intervention. Among 33 multiparous participants, 69.7% had a history of cesarean section (C/S), and 30.3% had delivered normally, indicating a higher prevalence of ectopic pregnancy among women with previous C/S deliveries (Table 3).

Table 3: Conception, Management of ectopic pregnancy and Previous mode of delivery among multiparous patient of the study subject (n=50)

Variables	Frequency	Percent
Conception		
Spontaneous	40	80.0
Induced	10	20.0

Variables	Frequency	Percent
Management		
Medical	5	10.0
Surgical	45	90.0
Mode of Delivery		
Normal delivery	10	30.3
C/S	23	69.7

There was a significant association between β -hCG testing and mode of management ($p=0.001$). β -hCG testing was performed in all medically managed cases (100%) but only in 24.4% of surgically managed cases. This suggests that β -hCG testing played a critical role in selecting candidates for medical management (Table 4).

Table 4: Management of ectopic pregnancy and β -hCG test

BHCG	Medical	Surgical	P value
Performed	5(100.0%)	11(24.4%)	0.001
Not performed	0(0.0%)	34(75.6%)	
Total	5	45	

Discussion

Ectopic pregnancy occurs when a fertilized egg implants outside the uterine cavity. It is a significant contributor to maternal morbidity and mortality^{2,5,8}. The incidence of ectopic pregnancy varies widely across the globe and is on the rise worldwide^{4,7,9}.

This study shows the most participants (34.0%) were aged 26 to 30 years, followed by 28.0% in the 21 to 25 age group, showing that ectopic pregnancy commonly occurs in women of peak reproductive age. The low incidence (2.0%) among women aged 41 to 45 years may be due to declining fertility with age. The predominance of younger women could also relate to early marriage and childbearing, which increase exposure to risk factors such as pelvic infections or previous abortions. These findings align with those of Verma et al¹⁰ who noted that most women (46.4%) were aged 21 to 30 years. Similarly, Chundakkadan et al¹ reported that 55.8% of patients fell within the 26 to 30 years age group. Nalini et al¹² found that 60.0% of participants were aged 20 to 30 years. Additionally, Mandal et al³ noted that the largest proportion of patients (72.0%) were between 21 and 30 years old, while Behera et al¹³ reported that 54.8% were in the same age group. Nethra et al¹⁴ also found that the majority of women (63.0%) were aged 21 to 30 years.

In the present study, most of the women with ectopic pregnancy were multiparous (66.0%) and nulliparous women (34.0%). The higher occurrence among multiparous women suggests that repeated pregnancies may increase the likelihood of tubal damage or infections, predisposing them to ectopic implantation. However, the notable proportion of nulliparous women indicates that ectopic pregnancy can also occur in women without prior pregnancies, possibly due to other risk factors such as pelvic inflammatory disease, previous pelvic surgery, or contraceptive use. These findings are consistent with previous studies reporting a greater risk among multiparous women but emphasizing that ectopic pregnancy can affect women across all parity groups^{11,15-16}.

In the present study, infertility and previous abortion were identified as the most common risk factors for ectopic pregnancy, each accounting for 22.0% of cases. Similarly, a history of abortion may predispose women to ectopic implantation through post-abortal infections and subsequent tubal damage. Emergency contraceptive pill use was observed in 18.0% of the participants. Pelvic inflammatory disease (PID) was found in 10.0% of cases, reflecting its well-established role in causing tubal scarring and obstruction. A previous history of ectopic pregnancy was observed in 8.0% of cases, reinforcing the known risk of recurrence due to residual tubal damage. Both oral contraceptive failure and tubal ligation were reported in 4.0% of participants. A small proportion (2.0%) conceived through assisted reproductive techniques (ART), supporting evidence that ART-related hormonal and mechanical factors can predispose to ectopic gestation. Interestingly, 10.0% of women had no identifiable risk factors. These findings align with those of other studies^{3,7,9,17-18}. Similarly, Banu et al⁵ reported that 28.6% of patients had a history of induced abortion, while 22.9% of cases had pelvic inflammatory disease as risk factors for ectopic pregnancy.

Ranji et al² highlighted that infections following induced abortions are a major cause of pelvic inflammatory disease (PID) in Asia, with the risk of ectopic pregnancy being 10 times higher in regions with a high incidence of illegal abortions and 6 times higher after clinical salpingitis¹⁶. Several case-control studies have also shown a strong link between ectopic pregnancy and infections like *Chlamydia trachomatis* and gonococcal infections⁹. However, in our study, patients were not screened for these infections. Bouyer et al¹⁹ in a large population-based case-control study in France, found that 1.1% of cases had a history of previous

ectopic pregnancy, indicating that a prior ectopic pregnancy is a risk factor for recurrence.

Sanjay et al who found that 47.5% of cases had pelvic inflammatory disease, 22.5% had a history of being treated for infertility, and 10.0% had endured some tubal surgery, while 5.0% had a history of ectopic pregnancies²⁰. In contrast, Nath et al²¹ found miscarriage and previous history of ectopic pregnancy the most common factor. In another study of 31 cases of ectopic pregnancy the most prevalent risk factors was a history of abortion at 29.0%, followed by the history of tubal surgery, infertility and PID at 9.6% cases, 3.2% cases and 3.2% cases respectively².

In the present study, the majority of patients with ectopic pregnancy (90.0%) were managed surgically, while only 10.0% received medical management. The predominance of surgical intervention suggests that most cases were diagnosed at an advanced stage or presented with complications such as tubal rupture or hemoperitoneum, necessitating immediate operative treatment. Medical management, typically with methotrexate, was limited to a small proportion of stable patients diagnosed early. This reflects the importance of timely detection and proper selection criteria for conservative therapy. Similar findings have been reported in other studies^{2,11,17}, where surgical management remains the mainstay of treatment, especially in settings with delayed presentation or limited resources for early diagnosis. Another study Monohar and Ramanujam²² reported preference for medical management (38.0%), medical failures necessitating surgical intervention (30.0%) and surgical management employed in 32.0% cases.

In this study, among multiparous women, the majority (69.7%) had a history of cesarean section, while 30.3% had previous normal vaginal deliveries. Similar findings have been reported in previous studies, where a higher incidence of ectopic pregnancy was observed among women with a history of cesarean delivery compared to those with normal vaginal births^{3,7,9}.

In this study, a statistically significant association was observed between β -hCG testing and the type of management ($p=0.001$). β -hCG testing was performed more frequently in medically managed cases (100.0%) than in surgically managed cases (24.4%), highlighting its role in guiding conservative treatment. This aligns with clinical practice, where serial β -hCG measurements help monitor early, stable ectopic pregnancies suitable

for medical therapy^{5,8,11,15}. Ahmed et al¹¹ reported that management of EP is tailored to the patient's clinical stability and includes expectant, medical, and surgical approaches. Expectant management is suitable for stable patients with low and declining β -hCG levels and small, non-viable ectopic pregnancies, requiring close monitoring. Medical treatment with methotrexate, a drug that inhibits rapidly dividing cells, is effective for early and uncomplicated cases, particularly when β -hCG levels are below 1500 IU/L.

These findings highlight the importance of early detection and careful assessment of risk factors in the management of ectopic pregnancy. The significant association between β -hCG testing and medical management underscores the value of timely biochemical evaluation for selecting patients suitable for conservative therapy. While surgical intervention remains the mainstay for most cases, especially those presenting with complications, medical management can be effective when applied to carefully selected, stable patients. Understanding the demographic profile, clinical presentation, and associated risk factors can aid clinicians in prompt diagnosis, tailored management, and ultimately in reducing morbidity and preserving fertility.

Conclusion

Ectopic pregnancy remains an important obstetric emergency, occurring most frequently among multiparous women in their peak reproductive years and commonly associated with infertility, previous abortion, cesarean section, emergency contraceptive use, and pelvic inflammatory disease. Although the majority of patients required surgical management, serum β -hCG played a pivotal role in identifying suitable candidates for medical treatment. Early identification of high-risk women, prompt diagnosis, and appropriate individualized management are essential to minimize maternal morbidity, reduce the need for intensive care, and improve overall clinical outcomes.

Acknowledgements

None

Conflict of Interest

The authors have no conflicts of interest to disclose

Financial Disclosure and Funding Sources

This study has been performed without any funding from outside else.

Contributions to authors: Shamima MTN, Begum S, Khanum T: Conceptualization, Supervision, Investigation, Data curation, Resources; Shamima MTN, Khanum T, Begum M: Writing -

original draft, Formal analysis, Validation, Methodology, Funding acquisition, Visualization, Project administration; Shamima MTN, Begum S, Khanum T: Writing - review & editing, Validation; Shamima MTN, Begum S, Rahman MAH: Investigation, Data curation, Software. All authors read and approved the final manuscript.

Data Availability

Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

Copyright: © Shamima et al. 2025. Published by *Journal of Current and Advance Medical Research*. This is an open-access article and is licensed under the Creative Commons Attribution Non-Commercial 4.0 International License (CC BY-NC 4.0). This article is published under the Creative Commons CC BY-NC License (<https://creativecommons.org/licenses/by-nc/4.0/>). This license permits use, distribution and reproduction in any medium, provided the original work is properly cited, and is not used for commercial purposes. To view a copy of this license, please See: <https://creativecommons.org/licenses/by-nc/4.0/>

Cite this article as: Shamima MTN, Begum S, Khanum T, Begum M, Rahman MAH. Clinical Profiles, Risk Factors and Management Outcomes of Ectopic Pregnancy attended at a Tertiary Care Hospital in Bangladesh. *J Curr Adv Med Res* 2025;12(1):37-43

ORCID

Mosammad Tanbir Nahar Shamima: <https://orcid.org/0009-0008-5495-6960>

Sheuly Begum: <https://orcid.org/0009-0004-3101-4533>

Tahmina Khanum: <https://orcid.org/0009-0001-7682-4984>

Monowara Begum: <https://orcid.org/0009-0001-0042-4327>

Mohammad Ahsan Habibur Rahman: <https://orcid.org/0009-0004-4059-6977>

Article Info

Received: 7 March 2024

Accepted: 3 April 2024

Published: 1 January 2025

References

1. Chundakkadan MS, Chandramathy K, Selvest N. Clinical presentation and outcome of ectopic pregnancy. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2021;10(9):3301-7.
2. Ranji GG, Rani GU, Varshini S. Ectopic pregnancy: risk factors, clinical presentation and management. *J Obstet Gynaecol India*. 2018;68(6):487-92
3. Mandal RC, Hoque IU, Pan A, Mondal M, Maity S, Pramanik A, Banerjee M. Evaluation of clinical presentation and maternal outcome of ectopic pregnancy in a tertiary care hospital: An observational cross-sectional study. *National Journal of Physiology, Pharmacy and Pharmacology*. 2024;14(9):1898-1909.
4. Patel M, Chavda D, Prajapati S. A retrospective study of 100 cases of ectopic pregnancy: clinical presentation, site of

- ectopic and diagnosis evaluation. *Int J Reprod Contracept Obstet Gynecol.* 2016;5(12):4313-4316.
5. Banu SA, Pervin M, Akther R, Kabir R, Tasnim S. Pattern of Presentation and Management of Ectopic Pregnancy in Tertiary Care Hospital. *Bangladesh Journal of Obstetrics & Gynaecology.* 2021;36(1):28-32.
 6. Vicken S Sepilian. MD, march 2011, Ectopic pregnancy, available from emedicine.medscape.com/article/258768. 2011;75-80.
 7. Panti A, Ikechukwu NE, Iukman OO, Yakubu A, Egondur SC, Tanko BA. Ectopic pregnancy at Usmanu Danfodiyo University Teaching hospital Sokoto: a ten-year review. *Ann Niger Med.* 2012;6(2): 87-91.
 8. Serpil Aydogmus, Serenat Eris, Huseyin Aydogmus, Goncagul Gulbas Tanrisever, Halime Sen Selim, Melike Demir Caltekin, Zeynep Cetinkaya Seyhanli, Sefa Kelekci. Management and Results of Ectopic Pregnancy Adapted by Clinical Guidelines: Two Years Experience of University Hospital in Turkey. *Open Journal of Obstetrics and Gynecology,* 2014;4:766 – 770.
 9. Belquis AJ and Dikrayal H. Frequency of Tubal Ectopic Pregnancy and mode of Management at Al- Thawra General Modern Hospital. *Critical Care Obst Gyne.* 2017;3 (1):5;1 – 5.
 10. Verma ML, Singh U, Solanki V, Sachan R, Sankhwar PL. Spectrum of ectopic pregnancies at a tertiary care center of northern India: a retrospective cross-sectional study. *Gynecology and Minimally Invasive Therapy.* 2022;11(1):36-40.
 11. Ahmed HS, Adam Hammad KM, Youssef Alsiddig IJ, Elamin Abdelgader MA, et al. Ectopic Pregnancy Risk Factors Presentation and Management Outcomes. *Clin J Obstet Gynecol.* 2023; 6: 143-149.
 12. Nalini N, Singh KA, Neetu S, Kumari A. Clinical Profile, Risk Factors and Outcomes of Ectopic Pregnancy in a Tertiary Care Hospital: A Prospective Indian Study. *Cureus.* 2023;15(11)
 13. Behera A, Ghadei R, Bal RN. A clinical study of ectopic pregnancy in a tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol.* 2018;7(11):4461
 14. Nethra HS, Praneetha K, Sreelatha S, Bhairi SS. A study on risk factors and clinical presentation of ectopic pregnancy. *The New Indian Journal of OBGYN.* 2018;4(2):146-9.
 15. Akter S, Sultana S. Management of Ectopic Pregnancy in a Tertiary Care Hospital by Surgery. *Bangladesh Journal of Obstetrics & Gynaecology.* 2013;28(1):21-5.
 16. Kalyankar V, Kalyankar B, Gadappa S, Ahire Y. Clinical study of ectopic pregnancy. *New Indian J OBGYN.* 2022;9:148-54.
 17. Uthpala V, Gracelyn JL. Study of risk factors associated with ectopic pregnancy—an observational study. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology.* 2022;5:2320-1770.
 18. Bhavna, Gupta K.B, Pathania K, Jindal M, Vohra R, Ahmed M. Risk Factors For Ectopic Pregnancy: A Case Control Study In Tertiary Care Centre. *J Dent Med Sci.* 2014;13(3):23-7.
 19. Bouyer J, Joel Coste, Taranch Shojaci, Jean-luc Pouly, Fernandez et al. Risk factors for ectopic pregnancy. A Comprehensive analysis based on a large case control population-based study in Franch. *Am J Epidemiol* 2023;157:185-194.
 20. Gupta R, Porwal S, Swarnkar M, Sharma N, Maheshwari P. Incidence, trends and risk factors for Ectopic Pregnancies in a tertiary care hospital of Rajasthan. *J Pharm Biomed Sci.* 2012;16(07):1-3.
 21. Nath J, Mishra A, Verma V, Gupta S. A 5-year Study on Ectopic Pregnancy in North India. *Sch Int J Obstet Gynec.* 2021;4(3):49-54.
 22. Manohar N, Ramanujam SL. Ectopic pregnancy: an analysis of risk factors, diagnosis and management. *Int J Reprod Contracept Obstet Gynecol.* 2025;14(3):791-796.