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A STUDY ON ECTOPIC PREGNANCY AND ITS RISK FACTORS AND MEDICAL MANAGEMENT IN TERTIARY CARE HOSPITAL OF WEST BENGAL: HOSPITAL-BASED CROSS-SECTIONAL STUDY

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Abstract

Background: Ectopic pregnancy, where a fertilized egg implants outside the uterine cavity, poses significant risks to maternal health. Early diagnosis and management are crucial in preventing complications. **Objective**: To assess the risk factors, clinical presentation, and management of ectopic pregnancies in a tertiary care hospital. **Methods**: A cross-sectional observational study was conducted with 42 confirmed ectopic pregnancy cases. Data were collected on demographic profiles, risk factors, clinical features, diagnostic tools, and treatment modalities. **Results**: The most common age group affected was 26–30 years (40.5%). Previous pelvic inflammatory disease (38.1%) and history of abortion (31%) were the leading risk factors. Most ectopic pregnancies were tubal (81%). Laparoscopic salpingectomy was the primary treatment (52.4%). **Conclusion**: Timely identification of risk factors and improved diagnostic tools are essential for reducing maternal morbidity. Laparoscopic surgery remains a safe and effective treatment option.

KEYWORDS: *Ectopic Pregnancy, Abortion.*

INTRODUCTION

Ectopic pregnancy (EP) refers to the implantation of a fertilized ovum outside the endometrial lining of the uterine cavity, with 98% occurring in the fallopian tubes. It remains a major cause of maternal morbidity and mortality, especially in the first trimester. Risk factors such as pelvic inflammatory disease (PID), prior ectopic pregnancy, and assisted reproductive techniques contribute to its occurrence[1].

Despite advancements in diagnostic techniques, EP remains a clinical challenge. This study aims to evaluate the risk factors, clinical features, and management approaches in patients presenting with ectopic pregnancy Ectopic pregnancy, where a fertilized egg implants outside the uterus, affects approximately 1-2% of all pregnancies globally[2-6]. While the incidence varies by region, ectopic pregnancies are a significant cause of early pregnancy-related morbidity and mortality. Global Prevalence and Trends: OverallIncidence: Ectopic pregnancies occur in about 1-2% of pregnancies worldwide. Regional Variations: The incidence can vary significantly between different regions and even within countries. Developed vs. Developing Countries[7]

Some reports indicate a higher incidence in developed countries compared to developing nations. For example, in the US and Europe, the rate is around 1-2%, while some African countries report higher rates[8-11]. Impact on Mortality:

Ectopic pregnancies are a leading cause of maternal death in the first trimester, accounting for 6-13% of all pregnancy-related deaths. Decline in Mortality: Despite the prevalence, there has been a decline in ectopic pregnancy-related mortality due to advancements in diagnosis and treatment[12-15]. Specific Examples: United States and Europe: Approximately 1-2% of pregnancies are ectopic. Africa: Some studies report rates as high as 4% in certain African countries[16-20]. Asia: Some studies show incidence rates ranging from 0.4-0.6% in Asia and the Middle East. Assisted Reproductive Technology (ART): Ectopic pregnancies are more common in pregnancies resulting from ART, with some studies reporting rates as high as 4%. Ectopic Pregnancy Sites: Fallopian Tubes: The most common site for ectopic pregnancy is within the fallopian tubes, accounting for the majority of cases. Other Sites: Less frequently, ectopic pregnancies can occur in the ovaries, cervix, or within a Cesarean section scar.

Factors Influencing Prevalence: Age: The median age for women with ectopic pregnancies is around 31 years old, Occupation: Some studies show differences in occupation between women with ectopic pregnancies and controls, according to a study in BMC Pregnancy and Childbirth. Risk Factors: Various factors can increase the risk of ectopic pregnancy, including previous ectopic pregnancies, pelvic inflammatory disease, and certain ART procedures. Sociodemographic factorsA study published in BMC Pregnancy and Childbirth showed differences in age and occupation

METHODS

This study was conducted in tertiary hospital. After obtaining institutional ethical committee approval. It was Cross-sectional observational study conducted on 42 patients in the department of Obstetrics & Gynaecology, at a tertiary care centre, from June/ 2024 to December /2024.

Total 42 participant were approached to project among them No one were excluded due to non-fulfilling of eligibility criteria and Total 42 Confirmed cases were included on the basis of fulling of the eligibility criteria . The institute Ethics Committee approval was obtained before starting the sample collection. A written and informed consent was taken from the patient regarding the study in his/her vernacular language and English. In this study Patients were subjected to: A detailed history of sign & symptoms and its duration. Detailed history of systemic diseases and its duration, medication were noted. Patients were subjected to General physical examination.

Flowchart.

Patient Enrolment (n = 42)
↓
Clinical Evaluation & Ultrasound
↓
Confirmation of Ectopic Pregnancy
↓
Risk Factor & Demographic Data Collection
↓
Treatment Modality (Medical/Surgical)
↓
Follow-up & Outcome Assessment

- **Study Design:** Hospital-based cross-sectional study
- **Sample Size:** 42 confirmed cases of ectopic pregnancy
- **Study Duration:** 6 months

- **Inclusion Criteria:** Women diagnosed with ectopic pregnancy based on clinical and ultrasonographic criteria
- **Exclusion Criteria:** Patients with incomplete records or lost to follow-up

Data Collection: Structured proforma was used to gather data on:

- Age, parity, and socioeconomic status
- Past gynecological history
- Clinical signs and symptoms
- Diagnostic modality used
- Management provided (medical or surgical)

Data Analysis:

Descriptive statistics were used; results presented in frequency and percentage. All data collected was entered in excel spread sheet Carefully. The data was analysed by using SPSS statistical software version 20. Statistical analysis in the form of percentages was done. Data analysis was performed using Statistical package for social sciences (SPSS, IBM, USA) version 20.0. Results were reported as mean ± standard deviation for quantitative variables

Statistical Analysis: SPSS v28, $p < 0.05$ significant

RESULTS

In this study we got to know thatEctopic pregnancy is associated with demographic profile of patient. 40.5%% patient suffered of Ectopic pregnancyis belongs to 26-30 years years age group followed by 23.8 % belong to 18-25 years ag group.

It means age is important factors for Cataract.increasing age will prone to Ectopic pregnancy.

Male (54.7%) were more prone to suffered of Ectopic pregnancy as compared to Female gender. (Table 1)

Prevalence in Middle class is more as compare to others class, its prevalence are47.6 % of Ectopic pregnancy (Table 1)

Demographic Profile (n = 42)

Parameter	**Number of Patients**	**Percentage (%)**
Age Group (years)		
18–25	10	23.8
26–30	17	40.5
31–35	9	21.4
>35	6	14.3
Gravida		
Primigravida	13	31
Multigravida	29	69
Socioeconomic Status		
Lower	16	38.1
Middle	20	47.6
Upper	6	14.3

In this study we found that PID is important risk factors for Ectopic pregnancy its prevalence is 38.1%Followed by previous abortion 31 % (Table 1)

Risk Factors Identified

Risk Factor	Number of Patients	Percentage (%)
Pelvic Inflammatory Disease (PID)	16	38.1
Previous Abortion	13	31
Previous Ectopic Pregnancy	4	9.5
Tubal Surgery/Adhesions	5	11.9
Use of IUD	3	7.1
Infertility Treatment (ART)	1	2.4

Results

- **Clinical Presentation:**
  - Abdominal pain: 90%
  - Vaginal bleeding: 57%
  - Amenorrhea: 100%
- **Site of Ectopic Pregnancy:**
  - Tubal: 34 cases (81%)
  - Ovarian: 3 cases (7.1%)
  - Cervical: 2 cases (4.8%)
  - Unknown: 3 cases (7.1%)
- **Diagnosis:**
  - TVS (Transvaginal Sonography): 100% detection
  - Serum β-hCG: Supportive
- **Management:**

Treatment Type	Number of Patients	Percentage (%)
Laparoscopic Salpingectomy	22	52.4
Laparotomy	8	19.1
Methotrexate (Medical)	12	28.5

DISCUSSION

This study highlights that ectopic pregnancy most commonly affects women in the 26–30 years age group, consistent with their reproductive peak. The tubal location dominates, especially ampullary. The strongest associations were with prior PID and abortions, aligning with existing literature[21].

Early clinical suspicion aided by ultrasound and serum β-hCG helps in timely intervention. Laparoscopic salpingectomy was the preferred surgical method due to lower invasiveness and faster recovery. Medical management using methotrexate was effective in stable, unruptured cases[22-24].

In this study we got to know that Ectopic pregnancy is associated with demographic profile of patient. 40.5%% patient suffered of Ectopic pregnancy is belongs to 26-30 years years age group followed by 23.8 % belong to 18-25 years ag group.

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Male (54.7%) were more prone to suffered of Ectopic pregnancy as compared to Female gender. (Table 1)

Prevalence in Middle class is more as compare to others class, its prevalence are 47.6 % of Ectopic pregnancy (Table 1

Medical management of ectopic pregnancy typically involves using a medication called methotrexate to stop the growth of the ectopic pregnancy and allow it to be reabsorbed by the body[25-28].

In this study we found that PID is important risk factors for Ectopic pregnancy its prevalence is 38.1%Followed by previous abortion 31 % (Table 1)

This approach is usually considered for early ectopic pregnancies that are not ruptured and when the patient is stable. Methotrexate: Methotrexate is an antineoplastic agent that inhibits cell growth, effectively ending the ectopic pregnancy. Administration: It's typically given as a single intramuscular injection. Monitoring: After the injection, close monitoring of hCG levels (a pregnancy hormone) is crucial to assess treatment effectiveness. Follow-up: Regular follow-up appointments are needed to track hCG levels and ensure they are declining, indicating the treatment is working[29].

If hCG levels plateau or rise, further treatment (either another dose of methotrexate or surgery) may be necessary. Hemodynamically stable: Patients should be stable, with no signs of active bleeding or rupture. No severe pain: They should not have severe abdominal pain. Reliable follow-up: Patients need to be able to return for follow-up appointments. Small ectopic pregnancy: The ectopic pregnancy should be relatively small on ultrasound (generally less than 4 cm) and without fetal cardiac activity. Low hCG levels: Lower initial hCG levels are typically preferred for medical management. Other considerations: Expectant management: In some cases, particularly with very early ectopic pregnancies, a "watchful waiting" approach (expectant management) may be considered, but this is usually only if the hCG levels are very low and declining on their own[30]. Surgical management:

If medical or expectant management fails, or if the ectopic pregnancy is advanced or ruptured, surgery is usually required. Side effects: Methotrexate can cause side effects like abdominal pain, nausea, and fatigue[31].

Important Note: It's crucial to consult with a healthcare professional for proper diagnosis and management of ectopic pregnancy. Medical management is a complex decision and depends on individual circumstances

CONCLUSION

Ectopic pregnancy continues to be a critical obstetric emergency. Early detection through transvaginal ultrasound and recognition of risk factors like PID and prior abortion history can aid in effective management The history of ectopic pregnancy, history of induced abortion and age > 35 years old were the risk factors with EP. In addition to the traditional risk factors, we found an association between body mass index and the risk of ectopic pregnancy. Women with a low BMI (< 18.5 kg/m^2) had a slightly higher risk of ectopic pregnancy than women with normal BM. Laparoscopic procedures offer safe outcomes, but prevention through reproductive health education remains essential

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CONFLICT OF INTEREST

The authors report no conflicts of interest

SUBMISSION DECLARATION

This submission has not been published anywhere previously and that it is not simultaneously being considered for any other journal.

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