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## Clinical profile and outcome of ectopic pregnancy in tertiary care hospital

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### Abstract

**Introduction:** Ectopic pregnancy is a common life-threatening gynaecological surgical emergency. Its incidence is rising globally and remains a major cause of morbidity and mortality in early pregnancy. The present study is aimed to determine clinical profile and outcome of ectopic pregnancies in a tertiary care teaching hospital.

**Methods:** After protocol review committee and institutional ethics committee permission, this prospective observational study was conducted in the OBG department of Dr Rajendra Prasad Government Medical College in Tanda on pregnant women in their first trimester with ectopic pregnancy characteristics and diagnosis. The study covered all prenatal clinic and labor room patients who met the selection criteria from February 2020 to January 2021.

**Results:** The most common USG finding of adnexal ectopic mass was detected in 97.2% (70 cases), out of which adnexal mass with mild free fluid in the pouch of Douglas on TVS was detected in 77.7% (56 cases). The presence of fluid in peritoneal cavity (Morrison pouch on TAS) indicating severe hemoperitoneum was detected in 20.8% (15 cases). Most common site of ectopic pregnancy was in the tubal ampullary region in i.e., 45.5% (30 cases), followed by isthmus 18.2% (12 cases), fimbria end of the tube 10.6% (7 cases) and isthmus-ampullary region in 10.6% (7 cases). Medically managed patients were 15.2% (10 cases) & their exact site of tubal ectopic was not known. The patients who were presented with ruptured tubal ectopic pregnancy were 63.6% (42 cases), unruptured tubal ectopic were 21.2% (14 cases), chronic ectopic were 7.5% (5 cases) and tubal abortion were 6.06% (4 cases).

**Conclusion:** Ectopic pregnancies are common and deadly gynecological emergencies. Late diagnosis and referral cause high ruptured ectopic pregnancy rates in developing nations.

**Keywords:** Ectopic pregnancy, USG, UTI

### Introduction

Every woman desire motherhood. Her dream may have nightmares. Every obstetrician and gynecologist face ectopic pregnancy, a life-threatening condition. Ectopic pregnancy occurs when the fertilized ovum implants outside the endometrial cavity of the uterus in the female genital canal [1]. Ectopic comes from Greek "Extropos," meaning out of place [2].

1-2% of pregnancies worldwide are ectopic [3]. Ectopic pregnancy may be the second leading cause of maternal death in underdeveloped nations after postorbital problems in the first three months [4]. If undiagnosed and untreated, ectopic pregnancy can cause maternal death. Ectopic pregnancy has increased, while death from it has decreased [5]. Ectopic pregnancy causes 19% of maternal near misses with a case fatality index of 2.85% and 4.35% of maternal mortality in poor countries even today [6].

Multiple factors enhance ectopic pregnancy risk. Blastocyst insertion and implantation require fallopian tube smooth muscle contractions and ciliary beating. Thus, fallopian tube pathologies can raise the likelihood of ectopic pregnancy [7].

The present study was aimed to evaluate the clinical profile and outcome of ectopic pregnancy in tertiary care hospital.

### Methods

After protocol review committee and institutional ethics committee permission, this prospective observational study was conducted in the Department of Obstetrics & Gynecology, Dr. Rajendra Prasad Government Medical College in Tanda on pregnant women in their first trimester with ectopic pregnancy characteristics and diagnosis.

The study covered all prenatal clinic and labor room patients who met the selection criteria from February 2020 to January 2021. After acquiring written informed consent from patients or attendants, prenatal clinic and labor room patients with clinical characteristics and ectopic pregnancy diagnosis were included. Inclusion criteria were included all pregnant women in the first trimester attending antenatal clinic and labor room of Department of OBG with confirmed diagnosis of ectopic pregnancy and willing to participate in the study were enrolled. Exclusion criteria included, all the intrauterine pregnancies, and cases with other causes of hemoperitoneum. Data were presented as frequency and percentages.

## Results

During the study period of one year, 8,815 patients were delivered to the institute. Seventy-two patients were diagnosed with ectopic pregnancy. Hence, the incidence of ectopic pregnancy was 0.81% in our study. Sixty-six patients were diagnosed with tubal ectopic pregnancy and 6 patients were diagnosed with nontubal ectopic pregnancy.

### Baseline Characteristics

Table 1 revealed that most of the patients, or 97.2% (70 cases) were married, while only 2.8% (2 cases) were single. The age range 26-30 years accounted for 45.8% (33 cases), followed by the age range 31-35 years (20.8%, 15 cases). Only 2.8% of the cases (2 cases) were younger than 20 years. The patients' average age was  $30.42 \pm 4.44$  years. 25% (18 cases) were nullipara, 38% (28 cases) were primipara, and 36% (26 cases) were multipara. Being a tertiary center, our institution handled 48.6% (35 cases) of the diagnoses, while 51.4% (37 cases) were referred by other hospitals. Most of the patients 55.5% (40 instances) were diagnosed between 6 to 8 weeks of gestation, while 26.3% (19 cases) and 9.7% (7 cases) were diagnosed between 6 to 8 weeks and 8 to 10 weeks, respectively. 8.3% of the (6 cases) gestational period was unknown. 6 weeks, 3 days and 1 week was the average gestational age. In 98.6% (71 instances), abdominal pain was the most common symptom, followed by amenorrhea 91.6% (66 cases), and the typical triad of amenorrhea, abdominal pain, and abnormal vaginal bleeding (58.3%). (42 cases). 15.2% (11 patients) had a history of fainting attacks, and 4.2% (3 cases) were in hypovolemic shock at the time of admission. abdominal discomfort was elicited in 61.1% (44 cases), there was cervical motion tenderness in 65.3%, and there was palpable adnexal mass in 81.9% (59 cases) (47 cases). Cervical ballooning and heavy bleeding were present in patients with cervical ectopic pregnancy, or 1.4% (1 case), according to valium.

### Beta-HCG levels and Hemoglobin levels

The discriminatory zone for beta-HCG value ranges between 1500 mIU/ml to 2000 mIU/ml according to the guidelines from ACOG 2008. In our study, beta-HCG levels of more than 5000 mIU/ml were observed in 51.5% (37 cases), beta-HCG of less than 1500 mIU/ml in 34.7% (25 cases), beta-HCG in the range of 1500-3000 mIU/ml in 6.9% (5 cases) and beta HCG in the range of 3000-5000 mIU/ml in 6.9% (5 cases). 30.5% (22 cases) had hemoglobin of less than 7 g/dl. The mean hemoglobin level

was  $8.69 \pm 2.48$  gm/dL (Table 2).

### Findings on transabdominal/transvaginal sonography

Table 3 shows that the most common USG finding of adnexal ectopic mass was detected in 97.2% (70 cases), out of which adnexal mass with mild free fluid in the pouch of Douglas on TVS was detected in 77.7% (56 cases). The presence of fluid in peritoneal cavity (Morrison pouch on TAS) indicating severe hemoperitoneum was detected in 20.8% (15 cases).

### Site of tubal ectopic pregnancy

Most common site of ectopic pregnancy was in the tubal ampullary region in i.e., 45.5% (30 cases) followed by isthmus 18.2% (12 cases), fimbria end of the tube 10.6% (7 cases) and isthmus-ampullary region in 10.6% (7 cases). Medically managed patients were 15.2% (10 cases) & their exact site of tubal ectopic was not known (Table 4).

### Outcome of tubal ectopic pregnancy

Table 5 shows that the patients who were presented with ruptured tubal ectopic pregnancy were 63.6% (42 cases), unruptured tubal ectopic were 21.2% (14 cases), chronic ectopic were 7.5% (5 cases) and tubal abortion were 6.06% (4 cases).

Table 1: Baseline Characteristics

Baseline Characteristics	Frequency (N=72)	Percentage (%)
<b>Marital Status</b>		
Married	70	97.2%
Unmarried	2	2.8%
<b>Age Categories (Years)</b>		
≤20	2	2.8%
21-25	9	12.5%
26-30	33	45.8%
31-35	15	20.8%
36-40	13	18.1%
<b>Age Mean (Years)</b>	30.42±4.44	
<b>Parity</b>		
Nullipara	18	25%
Primipara	26	36.1%
Multipara	28	38.9%
<b>Referral Status</b>		
Non-Referred	35	48.6%
Referred	37	51.4%
<b>Gestational age at time of admission</b>		
≤6 weeks	19	26.4%
6wks, 1day to 8 weeks	40	55.6%
8wks, 1day to 10 weeks	7	9.7%
10wks, 1day to 12 weeks	0	0.0%
Not Know	6	8.3%
<b>Symptoms</b>		
Amenorrhea	66	91.7%
Abdominal Pain	71	98.6%
Vaginal Bleeding/Spotting	42	58.3%
Shock	3	4.2%
Fainting Attack	11	15.3%
Triad	42	58.3%
<b>Signs</b>		
Shock	3	4.2%
Pallor	48	66.7%
Hypertension	13	18.1%
Abdomen Tenderness	44	61.1%
Abdomen Guarding/Rigidity	37	51.4%
Cervical Motion Tenderness	47	65.3%
Palpable Adnexal Mass	59	81.9%
Cervical Ballooning	1	1.4%

**Table 2:** Beta-HCG levels in the patients

Beta-HCG levels (mIU/ml)	Frequency (N=72)	Percentage (%)
<1500	25	34.7%
1500-3000	5	6.9%
3000-5000	5	6.9%
>5000	37	51.4%
Hemoglobin levels (gm/dl)		
<5	6	8.3%
5-7	16	22.2%
7-10	27	37.5%
>10	23	31.9%

**Table 3:** Findings on transabdominal/transvaginal sonography

Findings on transabdominal/transvaginal sonography	Frequency (N=72)	Percentage (%)
Adnexal mass (TVS)	70	97.2%
Adnexal mass with free fluid in pelvic cavity (TVS)	56	77.8%
Mass with free fluid in peritoneal cavity (TAS)	15	20.8%

**Table 4:** Site of tubal ectopic pregnancy

Site of tubal ectopic pregnancy	Frequency (N=72)	Percentage (%)
Ampulla	30	45.5%
Isthmus	12	18.2%
Fimbria	7	10.6%
Isthmo-Ampullar	7	10.6%
Not Known (Unruptured)	10	15.2%

**Table 5:** Outcome of tubal ectopic pregnancy

Outcome of Pregnancy	Frequency	Percentage (%)
Tubal Abortion	4	6.1%
Unruptured ectopic	14	21.2%
Ruptured ectopic	42	63.6%
Chronic ectopic	5	7.6%

## Discussion

Ectopic pregnancy is a common obstetrical emergency in early pregnancy all over the world. It is one of the important causes of maternal morbidity and mortality globally. Ectopic pregnancy presents as an acute emergency and a life-threatening event, generally in the first three months of pregnancy. It accounts for 10% of maternal mortality and morbidity globally. Approximately 1 to 2% of all pregnancies in developed and developing countries are ectopic pregnancies. In Southeast Asia region, the incidence of ectopic pregnancy has increased and varies between 0.25% to 1.9%. This increase in the incidence has been attributed to an increase in STDs, cesarean sections, ART and due to improved diagnostic modalities and improvement in health facilities.

In our study, incidence of ectopic pregnancy was 0.81%. In a study by Das, *et al.*, incidence of ectopic pregnancy was 0.95% of total births<sup>[8]</sup>. Recently, Verma, *et al.* reported incidence of ectopic pregnancies as 2.3%<sup>[9]</sup>. The main reason of varied incidence is reported to be affected by number of referrals.

97.2% of patients were married whereas 2.8% (2 cases) were single. 45.8% (33 cases) were 26–30 years old, followed by 31–35 years old (20.8%, 15 cases). Two cases (2.8%) were under 20. Subjects averaged 30.42 years. Similarly, the most common age group in study by Dheepthikaa, *et al.*,<sup>[10]</sup> was 26–30 years in 35.71% patients and Singh, *et al.*<sup>[11]</sup> found 53.13% patients in the age group of 27–32 years.

We found 25% (18 cases) nullipara, 38% (28 cases) primipara, and 36% (26 cases) multipara. In a study by Gyamtsho, *et al.*,<sup>[12]</sup>

20.19% cases were unmarried while 79.81% cases were married. Majority of the patients were multipara in studies conducted by Behera, *et al.*<sup>[13]</sup> (48.4%).

In our study, 55.5% (40 cases) of patients were diagnosed between 6 and 8 weeks of gestation, while 26.3% (19 cases) and 9.7% (7 cases) were detected between 8 and 10 weeks. The gestational period was unknown 8.3% (6 times). The gestational age averaged 6 weeks, 3 days, and 1 week. In a study by Nath, *et al.*,<sup>[14]</sup> the mean period of gestation at the diagnosis of ectopic pregnancy was 7 weeks 1 day.

Stomach discomfort was the most common symptom (98.6%, 71 cases), followed by amenorrhea (91.6%) (66 cases) and the classic triad of amenorrhea, abdominal pain, and irregular vaginal bleeding (58.3%). 15.2% (11 patients) had fainting attacks, and 4.2% (3 cases) were in hypovolemic shock at admission. 61.1% (44 cases) had abdominal discomfort, 65.3% had cervical motion soreness, and 81.9% (59 cases) had palpable adnexal mass (47 cases). Valium reported 1.4% (1 instance) of cervical ectopic pregnancy patients had cervical ballooning and severe bleeding.

In a study by Ranji, *et al.*,<sup>[15]</sup> most common symptoms ectopic pregnancy was Amenorrhea (95.8%) followed by Vaginal bleeding (41.2%), abdominal Pain (62.2%), Fainting Attack (11.8%), and Triad (27.7%). In a study by Tahmina, *et al.*,<sup>[16]</sup> the most common signs in this study was abdominal tenderness (75%), followed by cervical motion tenderness (58.3%) and haemodynamic shock (26.4%).

Most common site of ectopic pregnancy was in the tubal ampullary region in i.e., 45.5% (30 cases), followed by isthmus 18.2% (12 cases), fimbria end of the tube 10.6% (7 cases) and isthmus-ampullary region in 10.6% (7 cases). Medically managed patients were 15.2% (10 cases) and their exact site of tubal ectopic was not known. In a study by Behera, *et al.*,<sup>[13]</sup> right side tubal pregnancy is more common than left side. Most common site of ectopic pregnancy was in ampulla of fallopian tube 51.6%. Isthmic tubal pregnancy was seen in 16.1% and 6.5% cases had cornual pregnancy. Only 3.2% had ovarian pregnancy. In a study by Sujata, *et al.*,<sup>[17]</sup> most of the cases were ampullary pregnancies (66.5%). 11% of cases were in the isthmus. Tubal abortion was seen in 5% of cases. There was one case of ovarian pregnancy and one case of heterotrophic pregnancy. 49% had left sided ectopic pregnancy and 47.5% had right sided ectopic pregnancy.

The patients who were presented with ruptured tubal ectopic pregnancy were 63.6% (42 cases), unruptured tubal ectopic were 21.2% (14 cases), chronic ectopic were 7.5% (5 cases) and tubal abortion were 6.06% (4 cases). In a study by Sujata, *et al.*,<sup>[17]</sup> tenderness on cervical movement was present in 75% cases. Ultrasound revealed a ruptured ectopic pregnancy in 67.5% cases, an unruptured ectopic pregnancy in 5% cases, and an adnexal mass in 25% cases.

## Conclusion

Ectopic pregnancies are common gynecological emergencies with substantial maternal mortality. Increased ectopic pregnancies. Late diagnosis and referral cause high ruptured ectopic pregnancy rates in developing nations. PID and postorbital sepsis are the biggest ectopic pregnancy risk factors. Because many patients lack risk factors, early diagnosis and therapy require a high index of suspicion. High-risk women must discuss ectopic pregnancy. Report missed periods to their doctor for early diagnosis. Women of reproductive age should learn about ectopic pregnancy risk factors and symptoms.

**Conflict of Interest**

Not available

**Financial Support**

Not available

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