

## Ectopic Pregnancy: A Descriptive Analytical Study in a Tertiary Care Hospital of Ballari

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### Abstract

**Background:** Ectopic pregnancy is a major health risk factor for women of child bearing age and if not diagnosed and treated properly can lead to life threatening complications. **Aims:** To determine the incidence, clinical presentations, risk factors, treatment, morbidity and mortality associated with ectopic pregnancy. **Materials and Methods:** It is a prospective study conducted at Vijayanagara Institute of Medical Sciences (VIMS), Ballari from January 2016 to June 2017. A total of 54 patients with ectopic pregnancy were admitted. These cases were analysed on clinical presentation, clinical findings, investigations, operative findings and outcome. **Results:** The incidence of ectopic pregnancy in the present study was 0.49% (54/10,836 deliveries). A majority of women (46.29%) were in the age group of 25-30 years and 89% were multigravida. The commonest risk factor identified was tubal surgery (25.92%). Pain abdomen (94.44%) and amenorrhea (79.62%) were the most common presenting symptoms. Salpingectomy was done in 83.33% of patients, where as 16.66% underwent salpingo-oophorectomy. All women received blood transfusion. No maternal mortality was noted. **Conclusion:** Ectopic pregnancy continues to be one of the important obstetrics emergencies. A high index of suspicion is needed for an early diagnosis, to prevent

complications and to preserve the future reproductive function of the patient.

**Keywords:** Ectopic Pregnancy; Abdomen and Amenorrhea.

### Introduction

Ectopic pregnancy is a pregnancy in which the fertilised ovum implants at a site other than the normal uterine cavity [1]. Ectopic pregnancy commonly occurs in the fallopian tube (95%). Other sites are cornua, broad ligament, ovary, cervix and abdominal cavity. An ectopic pregnancy is a potential medical emergency and if not treated properly can lead to maternal death. It is the leading cause of maternal morbidity and mortality in the first trimester and accounts for 10% to 15% of all maternal deaths mainly in the developing world, where the patients usually present late, with rupture and shock [2]. It is assuming greatest importance because of its increasing incidence and its impact on womens fertility [3]. Most likely cause of ectopic pregnancy is delay in the passage of the fertilised ovum from the fallopian tube to the uterine cavity [4]. Many factors increase the risk of ectopic pregnancy, important being pelvic inflammatory disease, repeat ectopic, failed sterilisation procedure, intrauterine contraceptive device usage, medical termination of pregnancy, previous LSCS, tuberculosis, tuboplasty, age above 35 years etc [5].

The diagnosis of ectopic pregnancy is complicated by wide spectrum of clinical presentations from asymptomatic cases to acute abdomen and hemodynamic shock [6]. Key to the diagnosis is determination of the presence or absence of an intrauterine gestational sac correlated with serum beta-

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HCG levels [7]. Greater awareness of risk factors and improved technology (biochemical markers and ultrasound) allows ectopic pregnancy to be identified before the development of life threatening events. Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatment to be employed [8].

This prospective study was undertaken to determine the incidence, clinical features, risk factors, treatment, and morbidity and mortality associated with ectopic pregnancy in a tertiary care centre.

### Materials and Methods

This is a prospective study conducted at Vijayanagara Institute of Medical Sciences (VIMS), Ballari, Karnataka. All the cases of ectopic pregnancies admitted during a period between January 2016 and June 2017 were included in the study. A detailed present and past history, clinical examination and required investigations were done. All the relevant information and data was recorded in detail in a structured proforma prepared by the investigator. The labour room register was used to determine the total number of deliveries during this period. The data was duly entered in MS excel sheet and descriptive statistical measures were used for analysis.

### Results

During the study period of one and half years, there were a total of 10,836 deliveries in our hospital and 54 cases of ectopic were operated. Hence the incidence of ectopic pregnancy in the present study was 0.49% (54/10,836 deliveries).

Table 1 shows demographic parameters. Majority of the patients 83.33% (45/54) were between the age group of 20 to 30 years. Above 30 years, the incidence was low. In the present study more number of patients belonged to the age group between 26-30 years (46.29%), followed by 20-25 years age group (37.03) and 20.37% (11/54) were primigravida.

Table 2 shows the risk factors for ectopic pregnancy in our study. Tubal surgery was the commonest risk factor seen in 14 (25.92%) patients, infertility treatment in 10 (18.51%), pelvic inflammatory disease was seen in 09 (16.66%) of patients, previous ectopic in 05 (09.25) and previous abortion in 04 (07.40). IUCD insertion was the predisposing factor in 2(3.70%) cases and no risk factors were noticed in 10 (18.51%) of patients.

Pain abdomen (94.44%), Amenorrhoea (79.62%) and vaginal bleeding (40.74%), were the usual presenting complaints (Table 3). The urinary pregnancy test was positive in 86.53% of cases and ultrasound revealed ectopic in 81.73% cases.

Table 1: Demographic parameters

Age group (y)	Number of cases (%)	Gravida	Number of cases (%)
20	01(01.85)	1	11(20.37)
20-25	20(37.03)	2	10(18.51)
26-30	25(46.29)	3	24(44.44)
31-35	05(09.25)	4	05(09.25)
35	03(05.55)	4	04(07.40)

Table 2: Distribution according to risk factors

Risk factor	Number of cases	Percentage
Tubal surgery	14	25.92
Infertility treatment	10	18.51
Pelvic-inflammatory disease	09	16.66
Previous ectopic	05	09.25
Previous abortion	04	07.40
IUCD insertion	02	03.70
No risk factors	10	18.51

Table 3: Clinical presentation

Clinical Presentation	Number of cases	Percentage
Abdominal pain	51	94.44
Amenorrhoea	43	79.62
Vaginal bleeding	22	40.74
Vomiting	10	18.51
Loose stools	01	01.85
Shock	01	01.85

**Table 4:** Distribution of cases according to site of ectopic pregnancy

Site of ectopic	Number of cases	Percentage
Ampullary	21	38.88
Isthmic	13	24.07
Tubal abortion	10	18.51
Infundibular	05	09.25
Ovarian	04	07.40
Interstitial	01	01.85

**Table 5:** Distribution according to condition of tube and amount of Hemoperitoneum

Condition of ectopic	Number of cases	Percentage
Ruptured	41	75.92
Unruptured	03	05.55
Tubal abortion	10	18.51
Hemoperitoneum $\geq$ 500ml	51	94.44
No hemoperitoneum	03	05.55

**Table 6:** Management of ectopic pregnancy

Management	Number	Percentage
Salpingectomy	45	83.33
Salpingo-oophorectomy	09	16.66

The commonest site of ectopic gestation was ampullary region (38.88%), followed by isthmus (24.07%) (Table 4). The number of ruptured ectopic pregnancies were 41 (75.92%), and 03 (05.55%) were unruptured and hemoperitoneum more than 500ml was seen in 51(94.44%) of cases (Table 5).

Out of 54 patients, 45(83.33%) underwent salpingectomy and 09 (16.66%) were treated with salpingo-oophorectomy (Table 6). Blood transfusion was given in 46 patients. There was no maternal mortality.

## Discussion

Ectopic pregnancy is a high risk condition, a nightmare for all gynaecologists and a reproductive challenge for the patient. There is considerable regional variation in its incidence and globally it has been on the rise over the past three decades [7]. Worldwide, ectopic pregnancy complicates 0.25-2% of all pregnancies [9]. The incidence of ectopic in the present study was 0.49%, which is comparable to an institution based study done between 1988-1993, in which the incidence in India was found to be 0.62% [10]. Similarly in a study in 2004, the annual incidence of ectopic pregnancy worldwide was found to be 0.1-0.17 in women between the age groups of 15-44 years [11]. In this study majority of patients were between the age groups of 20-30 years (83.33%), in concurrence with studies done by Tuli AG et. al [7], in which 44.44% of cases were between 26-30 years age group and study done by AO Igwegbe et al [12] in which

mean age was 30.1 years. This is probably because of early age of marriage, child bearing and subsequent sterilisation in our country. Ectopic pregnancy was more common in multiparous women in our study i.e 79.63% similar to other studies by Shetty S et al (83.9%) [13] and Karki RC et al. (80%) [14]. This may be because newly married people with early unintended pregnancy often procure unsafe abortions by use of medical abortion pills, which subsequently predisposes them to having an ectopic gestation in future pregnancies [15].

In our study the commonest risk factor for ectopic pregnancy was tubal surgery (35.18%). After tubal sterilization, there may be recanalization or formation of tuboperitoneal fistulae. The opening is small enough for the sperm to pass through but too small for the fertilised ovum which results in implantation in distal tubal segment, increasing the incidence of ectopic pregnancy after tubal surgery [16]. Other important risk factors in our study were infertility treatment, pelvic inflammatory disease, previous ectopic, previous abortion, and IUCD insertion. Similar risk factors were noted in other studies [13,17]. Risk of ectopic pregnancy was more in women who underwent surgical abortion, due to infection [18]. The risk of ectopic pregnancy is even higher after three or more abortions [18]. After one ectopic, there is a 10% risk of having a second ectopic pregnancy and after two ectopics, this risk increases to 25% [19].

Most common presenting symptom in the present study was abdominal pain (94.44%), similar to study by Shetty S et al and Wakankar R et al [13,20]. In which abdominal pain was seen in 80.6% and 86.53%

respectively. Other important symptoms were amenorrhoea (79.62%) and vaginal bleeding (40.74%). The classical triad of abdominal pain, amenorrhoea and vaginal bleeding was seen in 32 (59.25%) cases, comparable to Wakankar R et. al (53.84%) [20] and Singh et.al (60%) [21]. These symptoms should help in early diagnosis of ectopic pregnancies and help in avoiding catastrophic ruptures.

The commonest site of ectopic in the present study was ampulla of the fallopian tube (38.88%), followed by isthmic portion (24.07%) similar to study by Aditi R [22] where ampullary ectopic was 45.2% and isthmic was (28.5%). In our study right sided tubal pregnancy was seen in 59.25% and left sided tubal involvement in 40.75%. This is in concurrence with the study by Shetty S et al [13] in which right sided tubal pregnancy was present in 62.1% and left tubal involvement in 37.9% cases. In this study ruptured ectopic was present in 75.92% cases, and 05.55% had unruptured ectopic, and tubal abortion was seen in 18.51% of cases, as seen in study by Shetty S et al [13] in which ruptured ectopic was seen in 61.3% cases, unruptured ectopic in 22.5% and tubal abortion in 12.9% of cases. It is noted that the patients with previous ectopic pregnancy are significantly more likely to experience a tubal rupture [23]. This increased presentation with ruptured ectopic makes the scenario clear that still in India, most of the patients present late, may be due to failure of making early diagnosis at various levels of healthcare delivery system [7].

Salpingectomy was the most common modality of treatment in our study (83.33%), similar to a study by Bansal N et. al [15] where salpingectomy was performed in 86.63% of cases. As most of the cases are ruptured ectopic pregnancies with massive haemoperitoneum, salpingectomy is the most common life saving surgical procedure performed [10]. Laparoscopy is preferable to laparotomy in the management of unruptured ectopic pregnancy but it has its own limitations and drawbacks. Laparoscopic salpingostomy was found less successful than open surgical approach due to a significantly higher persistent trophoblast rate in laparoscopic salpingostomy and laparotomy may be safer than laparoscopy in women who have had a large intra-abdominal bleed in whom achieving haemostasis is a priority [24]. Ectopic pregnancy can be managed medically with methotrexate. As medical management needs extremely close follow up and hospitalisation, surgical management is still the method of choice in our country [25]. Surgical treatment is indicated if the patient is hemodynamically unstable,  $\beta$ -HCG is greater than 10000 mIU/ml, the ectopic pregnancy is  $\geq$  4cm in diameter, if there is medical contraindication to

methotrexate and if the patient may not be followed up adequately after treatment [26].

No maternal mortality was seen in our study. Morbidity included anaemia and blood transfusion. By reducing and identifying the risk factors and 'catching' the patients at the earliest, it is possible to improve the prognosis so far as morbidity, mortality and fertility are concerned.

## Conclusion

Ectopic pregnancy still remains one of the major causes of maternal morbidity and mortality. It continues to be one of the important obstetric emergencies. As the incidence of ectopic pregnancy is rising, it is necessary to detect and treat early. Proper history and an early pelvic USG remain the foundation for initiating appropriate workup that results in accurate and timely diagnosis of ectopic pregnancy. Early diagnosis with use of minimal access surgery or medical management can change the scenario of ectopic pregnancy in the developing world.

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