



### Original Research Article

## Study of Incidence and Outcomes of Ectopic Pregnancy: A Retrospective Study in a Tertiary Care Centre at Muzaffarpur, Bihar

Authors

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### **Abstract**

**Objective:** *pregnancy beyond the uterine cavity is known as ectopic pregnancy and is a major cause of maternal morbidity and mortality. Dealing with ectopic pregnancy is always a challenge in clinical practice of obstetrics. With greater awareness in high-risk cases and better screening procedures, life threatening ectopic pregnancy can be prevented. This study was conducted to calculate incidence of ectopic pregnancy, to study the associated demographic factors and to analyze the various aspects of ectopic pregnancy in our hospital.*

**Materials and Methods:** *A retrospective study was carried out to calculate the incidence, to study the associated demographic factors and outcomes of ectopic pregnancy. The study was done in Department of Obstetrics & Gynecology at S. K. Medical College, Muzaffarpur, Bihar for study period of one year from January 2017 to December 2017. Data regarding cases of ectopic pregnancy was collected, analyzed and interpreted.*

**Results:** *In our study, for the period from January 2017 to December 2017, total of 9,027 deliveries were conducted. Total 47 cases were diagnosed as ectopic pregnancy. The incidence of ectopic pregnancy in our study is 1.56 in 300 deliveries. Most of the cases were in the age group of 20-30 years (63.83%). 29.78% cases had history of PID. Among various modalities of surgical management, salpingectomy was done in total of 59.57 % cases of ectopic pregnancies.*

**Conclusion:** *Early detection of high risk pregnancies can save a lot of maternal lives. Women with previous ectopic pregnancy preventive measure can be taken in future pregnancies. Emergency management system should be sound and available round the clock at every level of health care delivery system.*

**Keywords:** *Ectopic pregnancy, Salpingectomy, PID, ART.*

### **Introduction**

Incidence of ectopic pregnancy varies from country to country and within the same geographical region depending upon the risk

factors in the population concerned. It has become a global problem and has shown a rising incidence during the last three decades all over the world.<sup>1</sup>. There are multiple factors that increase chance of

ectopic pregnancy, but it is important to note that ectopic pregnancies can occur in women without any of these risk factors. The rising incidence of ectopic pregnancy in the past few years is due to a number of risk factors which include PID, infertility, IUCD, tubal surgeries, assisted reproductive techniques (ART) and availability of better diagnostic modalities.<sup>2</sup> The natural incidence of heterotrophic pregnancies approximates 1 per 30,000 pregnancies. However, because of assisted reproductive technologies (ART) their incidence has increased to 1 in 7000 overall, and following ovulation induction, it may be as high as 0.5 to 1 percent.<sup>3</sup> After one previous ectopic pregnancy, the chance of another approximates 10 percent.<sup>4,5</sup> Prior sexually transmitted disease or other tubal infection, which can destruct normal architectural structure of tube, is another common risk factor. One episode of salpingitis can be followed by a subsequent ectopic pregnancy in up to 9 percent of women.<sup>6</sup> The number of ectopic pregnancies is decreased because pregnancy occurs less but due to some contraceptive failures, number of ectopic pregnancies is increased. Examples include tubal sterilization, copper and progestin-only contraceptives.<sup>7</sup> Smoking is also a known association, although the underlying mechanism is unclear.<sup>8</sup> Congenital fallopian tube anomalies, especially those secondary to in-utero diethylstilbestrol exposure, can also lead to malformed tubes and higher ectopic rates.<sup>9</sup> High serum  $\beta$ -hCG level and rapid growth, leading to an immediate diagnosis of ectopics. These carry a higher risk of tubal rupture.<sup>10</sup> With chronic ectopic pregnancy, abnormal trophoblast die early, and thus negative or lower, static serum  $\beta$ -hCG levels are found.<sup>11</sup> Chronic ectopic pregnancies typically rupture later, if at all, but commonly form a complex pelvic mass, which often is the reason promoting diagnostic surgery.<sup>12-14</sup>

### Materials and Methods

A retrospective study was carried out over a period of one year from January 2017 to

December 2017 in the department of Obstetrics and Gynecology at S. K. Medical College, Muzaffarpur, Bihar. All women who were admitted at our hospital and diagnosed as having ectopic pregnancy were included in study as study subjects. Those cases that's all relevant information were not available, excluded from the study. All selected cases of ectopic pregnancy during were analyzed in terms of demographic variables like age, residence, parity etc. Various information regarding types, site and associated risk factors of ectopic pregnancy were also collected. Other parameters studied were clinical features, diagnostic modalities used to confirm the diagnosis, mode of management given and outcomes. All the relevant data were collected from hospital records and departmental registers. Collected data were computed and analyzed statistically.

### Results

A total of 47 cases of ectopic pregnancy were recorded for the period of one year. During the period, the total number of deliveries was 9,027. 47 cases of ectopic pregnancy were seen. Hence the incidence of ectopic pregnancy in our study is 1.56 in 300 deliveries. Most of the women were in the age group of 20-30 years (63.83%). 26 cases (55.32%) belonged to urban area and 21 cases (44.68%) were resident of rural area. Majority of cases were multiparae (39; 82.98%). [Table 1]

**Table-1**

Demographic profile	Number of cases (47)	Percentage
Age in years		
<20 years	7	14.89%
20 – 30 years	30	63.83%
>30 years	10	21.28%
Residence		
Rural	21	44.68%
Urban	26	55.32%
Parity		
Primi	8	17.02%
Multi	39	82.98%

Table-2

Risk factors	No of cases (47)	Percentage
History of PID	14	29.78%
Previous induced abortion	11	23.40%
History of infertility	8	17.02%
History of tubal ligation	6	12.76%
Previous ectopic pregnancy	3	6.38%
ART	3	6.38%
Contraception failure	2	4.25%
Tubal reconstructive surgery	1	2.12%
Endometriosis	1	2.12%
Unknown	16	34.04%

Table-3

Clinical types	No of cases
Acute	36
Unruptured	6
Sub-acute/chronic	5
Site of implantation	No of cases
Tubal	
Right	29
Left	16
Non tubal	
Secondary abdominal	
Right	1
Left	0
Ovarian	
Right	1
Left	0
Tubal	
Ampullary	37
Isthmic	5
Fimbrial	3
Non tubal	
Secondary abdominal	1
Ovarian	1

Table-4

Clinical features of ectopic pregnancy	Number of cases (47)	Percentage
Symptoms		
Abdominal pain	42	89.36%
Vaginal bleeding	42	89.36%
Amenorrhoea	40	85.1%
Fainting attack/Vomiting	36	76.59%
Signs		
Pallor	42	89.36%
Features of shock	36	76.59%
Abdominal tenderness	37	78.72%
Abdominal distension	30	63.82%
Cervical movement tenderness	34	72.34%
Adnexal mass	37	78.72%
Diagnostic modalities of ectopic pregnancy	Number of cases (47)	Percentage
Clinical alone	7	14.9%
Clinical and TVS/USG of whole abdomen	39	82.97%
Clinical and Laparoscopically	1	2.13%

Table-5

Hemoperitoneum	Number of cases (47)	Percentage
<500ml	8	17.02%
500-1500 ml	23	48.94%
>1500 ml	11	23.4%
No haemoperitoneum	5	10.64%

Table-6

Cases and management	No of cases
Acute ectopic pregnancy	
Expectant	0
Medical	0
Surgical	36
Unruptured ectopic pregnancy	
Expectant	2
Medical	1
Surgical	3
Chronic ectopic pregnancy	
Expectant	0
Medical	1
Surgical	4

Table-7

Surgical intervention	No of cases(47)	Percentage
Salpingectomy	28	59.57%
Salpingectomy and Tube ligation	12	25.53%
Salpingo-oophorectomy	6	12.77%
Salpingostomy	1	2.13%

In our study, 29.78% cases had history of PID, 23.4% cases of ectopic pregnancy had history of previous induced abortion and 17.02% cases had history of infertility. In 12.76% cases there were history of tubal ligation. 6.38% cases of ectopic pregnancies had history of previous ectopic pregnancy. In 34.04% of cases no established risk factors had been identified. [Table-2]

Out of 47 cases, 36 cases were diagnosed as acute ectopic pregnancy, 6 cases were unruptured ectopic pregnancy and 5 cases were sub-acute ectopic pregnancy. In our study, in 45 cases (95.74%), there were tubal implantation and there were 1 case of secondary abdominal ectopic pregnancy and 1 case of ovarian ectopic pregnancy. Among tubal ectopic pregnancy, 64.44% cases were found in right side. Secondary abdominal ectopic pregnancy and ovarian ectopic pregnancy both were also in right side. Among

tubal pregnancies, 82.22% were ampullary in location, 11.11% isthmic and 6.66% were fimbrial. [Table-3]

89.36% of cases complained of abdominal pain and vaginal bleeding. 85.1% cases complained of amenorrhea. Pallor was present in 89.36% of cases. Abdominal tenderness and adnexal mass present in 78.72% cases. 76.59% cases of ectopic pregnancies had features of shock and 72.34% had tenderness in cervical movement. 14.9% cases of ectopic pregnancies were diagnosed alone on the basis of clinical examination and 82.97% cases were diagnosed by clinical examination and TVS/USG whole abdomen. [Table-4]

Hemoperitoneum were seen in total of 89.36% of cases. In 10.64% of cases, no hemoperitoneum were seen. In 48.94% cases hemoperitoneum was seen having volume of blood in range of 500-1500 ml. [Table-5]

All cases of acute ectopic pregnancies were managed surgically. Expectant management was done in 33.33% cases of unruptured ectopic pregnancies and 16.66% cases had medical management. 50% cases of unruptured ectopic pregnancies were managed surgically. Surgical management was done in 80% cases of sub-acute ectopic pregnancies and medical management was done in 20% case. [Table 6]

Among various modalities of surgical management, salpingectomy was done in total of 59.57 % cases of ectopic pregnancies. Salpingectomy and Tube ligation was done in 25.53 % cases. Salpingo-oophorectomy was done in 12.77 % cases. [Table7] We had two maternal deaths due to late referral to us.

### Discussion

In our study, 36 cases were diagnosed as acute ectopic pregnancy. In our study, most of the women were in the age group of 20-30 years (63.83%) and majority of the cases were multiparae (39; 82.98%). This finding is comparable to study by Singh et al.<sup>15</sup>

23.40% cases had history of induced abortion which is comparable to the findings of study by

Rashmi et al (18.91%).<sup>16</sup> In our study, 17.02% cases had complain of infertility. This finding has correlation with the fact that cases of infertility treated by clomiphene and other ovulation induction agents may get predisposed to tubal implantation because of hormonal alterations. In studies by Chi et al and Cheng et al, it was observed that the risk of tubal pregnancy after sterilization is between 5-16%, this finding is similar to finding of our study that 12.76% of cases had history of tubal ligation.<sup>17,18</sup> History of previous ectopic pregnancy were present in 6.38% cases in our study correlating with studies done by Uzma S et al (5%) and Samiya et al (5.26%).<sup>19,20</sup>

In our study 82.97% cases were diagnosed by clinical history and examination aided by TVS/USG whole abdomen. Similar findings was observed by Condous et al who experienced sonology can diagnose 75-80% of ectopic gestation by transvaginal sonography in the first visit itself.<sup>21</sup>

There were 45 cases of tubal pregnancy and one case each of ovarian and secondary abdominal pregnancy. Among tubal pregnancies, 82.22% were ampullary in location, 11.11% isthmic and 6.66% were fimbrial. 89.36% of cases complained of abdominal pain and vaginal bleeding. 85.1% cases complained of amenorrhea. Pallor was present in 89.36% of cases. Hemoperitoneum were seen in total of 89.36% of cases.

### Conclusion

There is an increase in the incidence of ectopic pregnancy and a decrease in maternal mortality. Avoiding risk factors for pelvic inflammatory disease such as having multiple sexual partners, having sex without using condom and early diagnosis and treatment of sexually transmitted disease, salpingitis and pelvic inflammatory disease can prevent emergency cases of ectopic pregnancies and decrease their incidence. With greater awareness in high-risk cases and better screening procedures, life threatening ectopic pregnancy can be prevented. Women who have had an ectopic pregnancy should be offered an

early ultrasound scan to establish the site of any future pregnancies. This needs attention to be paid regarding appropriate antenatal care, early identification of high risk, prompt referral facilities and increased institutional deliveries. There should be proper antenatal care so that early detection of high risk pregnancies and their prompt management and referral can be ensured

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