

## A CLINICODEMOGRAPHIC STUDY OF INCIDENCE OF ECTOPIC PREGNANCY, THE RISK FACTORS, AND ITS MANAGEMENT

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### Abstract

**Background:** Ectopic pregnancy is a life-threatening emergency and a leading cause of maternal mortality in first trimester. Recent times have seen a rising trend in the incidence of ectopic pregnancy and there is a need to identify the risk factors associated. **Materials and Methods:** This retrospective observational study was carried out in the Post Graduate Department of Obstetrics and Gynecology, S.M.G.S Hospital, GMC Jammu, India from April 2021 to March 2022. This study was aimed to study the sociodemographic and clinical profile of patients reporting with ectopic pregnancy in our setup, the incidence, risk factors and management. **Result:** The incidence of ectopic pregnancy observed in our setup was 1.68%. The mean age of patients was 29.1±4.5 years. 72.9% were multiparous. Most common risk factor observed was previous caesarean section (23.3%). Most common ultrasonography findings of the 168 cases was complex adnexal/ tubo-ovarian mass (83.3%). Ampulla was the most common site (74.3%). Majority of the cases were ruptured (67.9%) and thus laparotomy was done in 88.09 % patients. **Conclusion:** Ectopic pregnancy is an obstetric emergency. Strong clinical suspicion and ultrasound helps in early diagnosis. With a rise in incidence of caesarean sections, there has been a rising trend in ectopic pregnancy, which in our study was the most common risk factor associated.

## INTRODUCTION

Ectopic pregnancy is a pregnancy in which the developing blastocyst becomes implanted at a site other than the endometrium of the uterine cavity. It is the leading cause of pregnancy related morbidity in the first trimester. The most common site is fallopian tube other sites being ovary, cervix, peritoneal cavity, broad ligament, caesarean scar etc.<sup>[1]</sup> The exact incidence is not known precisely but studies suggest an incidence of 0.25- 2.0% worldwide.<sup>[2]</sup> In the recent times there has been an increase in incidence of ectopic pregnancy. Further, the increased incidence of ectopic pregnancy may be the result of earlier diagnosis, with the use of sensitive pregnancy tests and transvaginal ultrasound detecting some ectopic pregnancies that in the past may have resolved spontaneously before diagnosis.<sup>[3]</sup> Several risk factors for Ectopic Pregnancy have been identified: pelvic inflammatory disease (PID)—especially for infections involving Chlamydia trachomatis,

smoking, previous pelvic surgery, previous ectopic, past and current use of an intrauterine device (IUD). Though the cases of ectopic pregnancy are on rise, the incidence of rupture and maternal deaths have declined due to early diagnosis and management.<sup>[4]</sup> In spite of better healthcare facilities, ectopic pregnancy remains one of the important cause of maternal deaths in India accounting to 3.5-7.1% of maternal deaths.<sup>[5]</sup>

### Aims and Objectives

1. To analyze the sociodemographic and clinical characteristics among patients reporting with ectopic pregnancy in our institute.
2. To study the incidence rate, risk factors and management associated with ectopic pregnancies.

## MATERIALS AND METHODS

This retrospective observational study was carried out in the Post Graduate Department of Obstetrics

and Gynecology, S.M.G.S Hospital, GMC Jammu, India from April 2021 to March 2022.

All patients diagnosed with ectopic pregnancies based on clinical presentation and radiological findings during this duration were included in the study. Data was collected in terms of age, parity,

risk factors, presenting complaints and period of amenorrhea. Radiological findings and clinical picture was correlated, treatment offered studied and final outcome observed. Data was analysed statistically.

## RESULTS

There were total 11011 deliveries during this study period. Total 185 cases were diagnosed with ectopic pregnancy, making the incidence of ectopic pregnancy 1.68% of the total number of deliveries at our hospital.

Out of these 168 cases presented with ultrasound documented tubal ectopic pregnancy, 15 were diagnosed as scar ectopic pregnancy, 1 was diagnosed as cervical ectopic pregnancy, and 1 was diagnosed as heterotopic (pregnancy seen both in the uterus as well as fallopian tube). It was observed that the age distribution of the patients varied from 18 to 42 years where majority of the patients belonged to the age group of 30-36 years i.e. 44.3%. The mean age was 29.1±4.5 years.

**Table 1: Age Wise Distribution of Patients**

AGE IN YEARS	N	PERCENTAGE(%)
18 to 24	34	18.3
24 to 30	65	35.2
30 to 36	82	44.3
36 to 42	3	1.6
>42	1	0.6
TOTAL	185	100

Majority of these females were multiparous i.e. 72.9% and 27.1% were nulliparous

**Table 2: Parity Wise Distribution of Patients**

Parity	N=185	Percentage%
0	50	27.1
1	62	33.5
2	54	29.2
3	14	7.5
4	5	2.7

Majority of the patients (56%) belonged to low socio economic strata. On analyzing the various risk factors it was observed that 23.2% of the patients had a previous LSCS, 20.5% had a history of previous abortion, 3.2% had a history of previous ectopic pregnancy, 7.6% gave history of infertility and 57.1% out of those gave history of having conceived subsequent to ovulation induction, 8.6% gave history of having received treatment for PID, 1% had an IUCD in situ, 0.5% gave history of previous tubal ligation, 0.5% had a uterine anomaly observed intra operatively.

**Table 3: Distribution of Cases by Risk Factors**

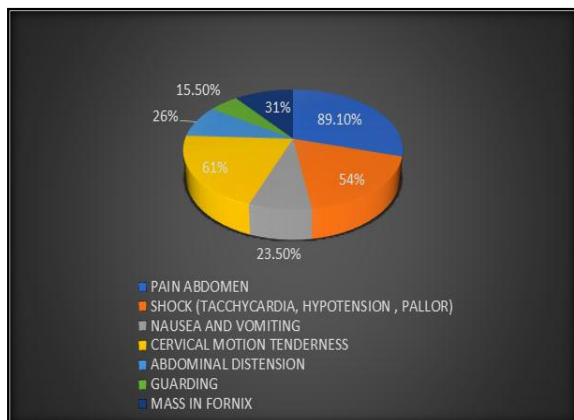
Risk Factor	N	%
H/O PID	16	8.6
Previous LSCS	43	23.3
Previous Ectopic	6	3.2
Previous Abortion	38	20.5
IUCD	2	1
Infertility	14	7.6
Uterine Anomaly	1	0.5
Tubal Ligation	1	0.5
Conceived After Ovulation Induction	8	4.3

Among the various clinical presentations 89.1% presented with pain lower abdomen, 54% presented with signs of shock (Tachycardia, Hypotension and Pallor), 62.1% had cervical motion tenderness on examination and 32.4% had a palpable mass in the fornix.

**Table 4: Laparotomy Findings According to Site**

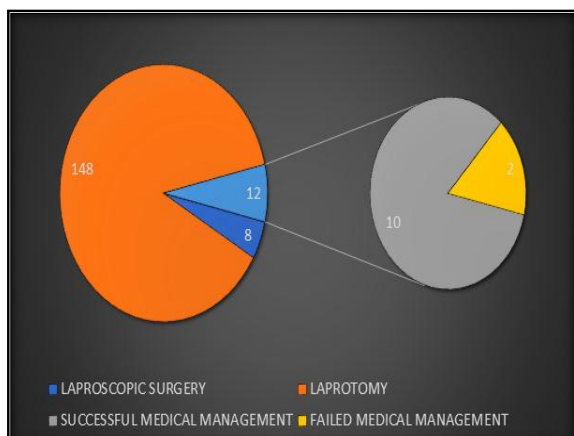
Site	N	%
Ampulla	125	74.3
Isthmus	22	13.3
Interstitial	8	4.8
Fimbrial	10	5.9
Ovary	3	1.7

Management of 35.4% of the patients was ipsilateral salpingectomy, 66.1% of the patients underwent bilateral salpingectomy, and 1 patient who had prior history of ruptured ectopic pregnancy underwent salpingostomy in order to preserve fertility. Those diagnosed with scar ectopic pregnancy were managed by suction and evacuation. Cervical ectopic pregnancy was managed by Injection Methotrexate followed by curettage. Heterotopic Pregnancy was managed by Ipsilateral salpingectomy along with Suction and evacuation of the aborted intrauterine pregnancy.



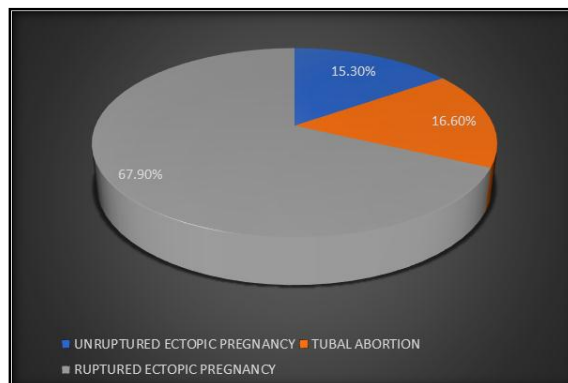
**Figure 1: Signs and Symptoms**

On Ultrasonography findings of the 168 suspected tubal ectopic pregnancy, 83.3% had a complex adnexal/ tubo-ovarian mass, 16.7% showed a definite gestational sac, out of which 38% had the presence of cardiac activity, 48.6% had presence of free fluid in the abdominal cavity out of which 77.7% had positive haemorrhagic tap. Of the 168 tubal ectopic pregnancy cases, 12 fulfilled the criteria for medical management and were treated with Injection Methotrexate and subsequent Beta HCG level monitoring, out of which 2 showed failure of medical management and subsequently underwent laparotomy and tubectomy. Of the remaining 156 cases, 8 cases were managed laparoscopically as findings were suggestive of unruptured ectopic pregnancy, and 148 underwent emergency laparotomy.



**Figure 2: Management of Tubal Ectopic Pregnancy**

Intra Operative findings suggested 15.3% were unruptured ectopic pregnancies, 16.6% were tubal abortions, 67.9% were ruptured ectopic pregnancies.



**Figure 3: Management of Tubal Ectopic Pregnancy**

Ampulla was found to be the most common site for tubal ectopic pregnancy 74.3% cases, and ovarian ectopics were the least common i.e. 1.7%

## DISCUSSION

There is a global rise in number of ectopic pregnancies which is due to better diagnostic modalities and early detection, increasing number of females undergoing pelvic surgeries, increasing number of STD and PID patients, more infertile patients opting for fertility enhancing surgeries and assisted reproductive techniques etc. Majority of the patients in this study belonged to the age group of 30-36 years i.e. 44.3% of the total population with the mean age being  $29.1 \pm 4.5$  years, which corresponded to the findings of the study conducted by Tahmina S et al.<sup>[5]</sup> This finding was most likely because majority patients in the present study were multipara and presented at a later age. There were 72.9% multigravidas in this study which correlated with studies done by Sudha VS et al. (81.58%), Shetty K et al., (83.9%), Panchal D et al., 81.66%.<sup>[6-8]</sup> Majority (56%) of patients belonged to low socioeconomic status. Because of poor hygiene in low socioeconomic status patients, they are at higher risk of pelvic inflammatory disease.<sup>[9]</sup> Several risk factors were analyzed and the most common risk factor was found to be history of previous LSCS which was observed in 23.2% patients, similar findings were obtained in the study conducted by Barik S et al., wherein they found that 26.07% patients had a history of prior cesarean section, and concluded that it was the most common risk factor for ectopic pregnancy.<sup>[10]</sup> Infertility was associated in 7.6% of the study population out of which 57.1% gave history of having conceived subsequent to ovulation induction. Clayton et al found that in

recent years, the incidence of ectopic pregnancy is on the rise in women attending infertility clinics even in the absence of tubal disease.<sup>[11]</sup> History of amenorrhea was common to all the patients and the subsequent most common presenting complaint was pain lower abdomen seen in 89.1% patients, which was similar to the findings of Barik S et al. , where abdominal pain was the most prominent symptom found in 98% of the cases.<sup>[10]</sup> As per the observations in our study, presence of a complex adnexal mass was the most common ultrasonography finding found in 83.3% patients, which was similar to the findings of the study conducted by Shetty VH et al. , where a complex adnexal mass was found in 60% patients.<sup>[12]</sup> Considering our hospital is a tertiary care, referral center, majority of cases were received from the peripheral areas and majority were found to be ruptured ectopic pregnancies 67.9% patients, thus the most commonly performed procedure for management was an emergency laparotomy. This was similar to the findings of the study conducted by Barik S et al. <sup>[10]</sup> Ampulla was found to be the most common site for tubal ectopic pregnancy which was similar to the findings of majority of the studies.

## CONCLUSION

Ectopic pregnancy is a condition which can mimic practically any gynecological disorder as well as many surgical catastrophes. If not attended in time, it can be life-threatening. The key to prevent this lies in early clinical diagnosis so that appropriate and timely intervention can be done. Unfortunately, ectopic pregnancy presentation is elusive. Ultrasound is the modality of choice for diagnosis. Differential diagnoses for nonvisualization of intrauterine pregnancy in a patient with a positive serum  $\beta$ -human chorionic gonadotropin (hCG) test include an early pregnancy, miscarriage, pregnancy of unknown location, and ectopic pregnancy. One should therefore be ectopic minded in order to diagnose ectopic pregnancy. In this study past caesarean section was considered the most common

risk factor. Rising trend of both ectopic pregnancies and caesarean sections have been noted in the recent times. With increasing incidence of caesarean section globally, are we unknowingly paving the way for more ectopic pregnancies in future? More studies are needed in this regard to find an answer.

**Conflicts of interest:** Nil

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