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Research Article

A Clinical Study of Incidence and Determinants of Ectopic Pregnancy in a Tertiary Centre

Dr Deepthi K[1], Dr. Krupa BM[2], Dr. Bhavana R[1]

[1]Junior Resident, Department of Obstetrics & Gynaecology. Sapthagiri Institute of Medical Sciences and Research Centre, Bengaluru, Karnataka, India. [2]AssociateProfessor, Department of Obstetrics & Gynaecology. Sapthagiri Institute of Medical Sciences and Research Centre, Bengaluru, Karnataka, India.

ABSTRACT

Ectopic pregnancy is leading cause of maternal morbidity and mortality in first trimester. It accounts for 2% of all pregnancies. Aims and objectives: To find out the incidence of ectopic pregnancy in our hospital and to determine the risk factors, clinical presentation, management and outcome of ectopic pregnancy. Methods: A Hospital based Retrospective clinical study carried out in Department of Obstetrics and Gynaecology of Sapthagiri Institute of Medical Sciences and Research Centre, Bengaluru for four years from August 2019 to August 2022. Results: The incidence of ectopic pregnancy was 2.8%, of which 93.93% were ruptured, 6.06% unruptured and 4.54% heterotopic pregnancies. Maximum patients (65%) were among age group of 21 to 30 years and were multigravida, 45.4% presented between 7-8+6 weeks of gestation. The common risk factor was previous abortion with Dilatation and curettage. Surgical management with salpingectomy was done in majority of cases(86.3%). 91% of ectopic pregnancy was in fallopian tube, 2 in ovaries and 1 in rudimentary horn of bicornuate uterus. The commonest site was ampulla (45.4%). Outcome was studied by need of blood transfusion in 39.3%, ICU admission in 15.15%. No maternal mortality encountered in this study. Conclusion: Since the incidence of ectopic pregnancy is on raising trend, high index of suspicion, early diagnosis and management are required to reduce maternal morbidity and mortality and for conservation of future reproductive capacity.

Key Words: *Ectopic pregnancy, heterotopic pregnancy, risk factors, classic triad, salpingectomy*

***Corresponding Author**
Dr Deepthi K
Junior Resident, Department of Obstetrics & Gynaecology. Sapthagiri Institute of Medical Sciences and Research Centre, Bengaluru, Karnataka, India

INTRODUCTION

Ectopic pregnancy is defined as the condition when the fertilized ovum gets implanted outside the uterine cavity. It is the leading cause of maternal morbidity and mortality in first trimester. It accounts for 1-2% of all pregnancies with a maternal mortality of 0.2 per 1000 estimated ectopic pregnancies [1]. 98% of ectopic pregnancies occurs in fallopian tube and rest in other sites such as ovaries, cervix, cesarean scar and intra-abdominal [2].

The classic triad of amenorrhoea, abdominal pain and vaginal bleeding may not be seen in all cases and some may present with non-specific symptoms, unaware of an ongoing pregnancy or even present with haemodynamic shock. The various risk factors for ectopic pregnancy are previous tubal surgery for fertility restoration or sterilization, previous ectopic pregnancy, Pelvic inflammatory disease, genital infection like STD's, IUD, and history of ART, previous pelvic or abdominal surgery and previous abortion [3].

Aims and objectives

To find out the incidence of ectopic pregnancy in our hospital.
To determine the risk factors, clinical presentation, management and outcome of ectopic pregnancy.

Materials and Methods

A Hospital based Retrospective clinical study carried out in Department of Obstetrics and Gynecology of Sapthagiri Institute of Medical Sciences and Research Centre, Bengaluru for four years from August 2019 to August 2022. Data were retrieved from medical records.Patient characteristics like age, parity, high risk factors, clinical presentation, management, complications, blood product transfusion, and ICU admission were recorded and statistically analysed. All the data thus collected were entered into MS Excel sheet using SSPS version 20.0 software. Results were expressed as frequency, percentage, mean.

Results

Out of 2347 deliveries during study period 66 were ectopic pregnancies with the incidence of 2.8% in our hospital. Out of which, 93.93% were ruptured, 6.06% were unruptured and 4.54% were heterotopic pregnancies.

Table 1 – Age wise distribution of cases

AGE GROUP	NUMBER	PERCENTAGE
< 20 years	1	1.5%
21-25 years	24	36.3%
26-30 years	19	28.7%
31-35 years	17	25.7%
>35 years	5	7.5%

Figure 1 – Age wise distribution of cases

Majority of patients (65%) were in age group of 21 to 30 years, followed by 25.7% cases between 31-35 years age group.

Table 2 – Parity wise distribution of cases

PARITY	NUMBER	PERCENTAGE
Nulliparous	23	34.9%
Multiparous	43	65.1%

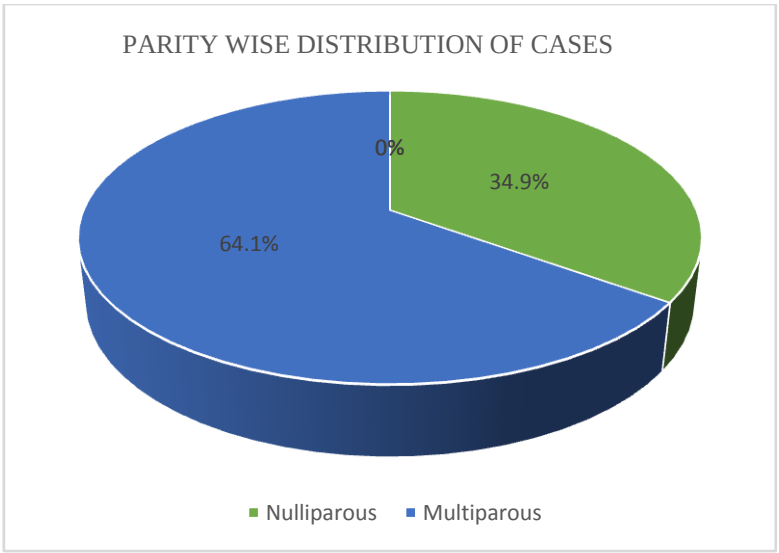

Figure 2 – Parity wise distribution of cases

65.1 % of women were multiparous followed by 34.9% were nulliparous.

Table 3 – Distribution of cases based on weeks of gestation

PERIOD OF GESTATION	NUMBER	PERCENTAGE
< 5 weeks	5	7.5%
5 – 6+6 weeks	25	37.8%
7 – 8+6 weeks	30	45.4%
9 – 10+6 weeks	5	7.5%
>11 weeks	1	1.5%

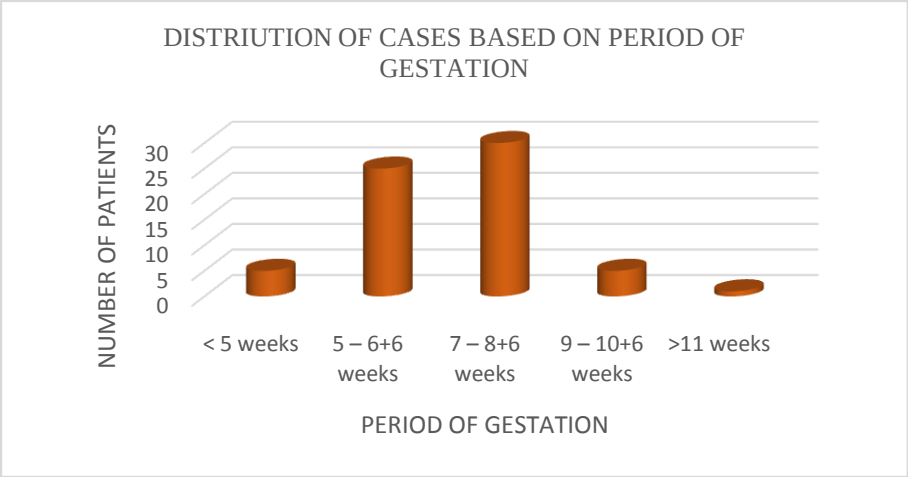

Figure 3 – Distribution of cases based on weeks of gestation

45.4% of women presented between 7-8+6 and 37.8%between 5-6+6 weeks of gestation.

Table 4 – Distribution of cases based on risk factors

RISK FACTORS	NUMBER	PERCENTAGE
No risk factor	15	22.7%
Previous abortion and D&C	25	37.8%
Previous ectopic	4	6%
Previous LSCS	5	7.5%
PID	11	16.6%
ART	1	1.5%
Tubal sterilization	3	4.5%
Tubal recanalization	2	3%

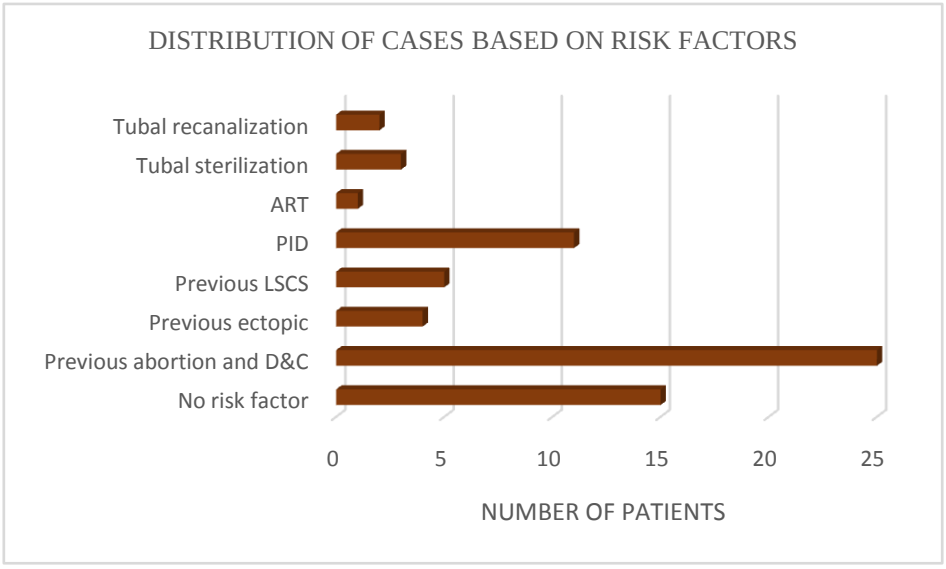

Figure 4 – Distribution of cases based on risk factors

Major risk factor for ectopic pregnancy in this study was previous abortion with D&C in 37.8%, PID in 16.6%, previous LSCS in 7.5%, history of previous ectopic in 6%, tubal sterilization in 4.5%, tubal recanalization in 3% of women. No risk factors were found in 22.7% of women.

Table 5 – Distribution of cases based on clinical presentation

SYMPTOMS	NUMBER	PERCENTAGE
Amenorrhea	62	93.9%
Pain abdomen	52	78.7%
Bleeding per vagina	29	43.9%
Vomiting	18	27.2%
Giddiness	9	13.6%

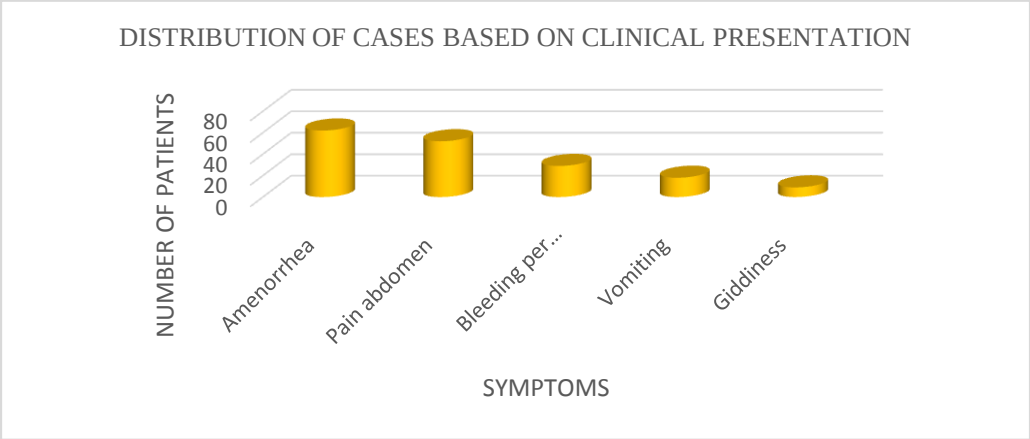

Figure 5 – Distribution of cases based on clinical presentation

Amenorrhea was present in 93.9% of women. The predominant symptom was abdominal pain in 78.7 % and classic triad was present in 33.3% of cases.

Table 6– Distribution of cases based on mode of management

MODE OF MANAGEMENT	NUMBER	PERCENTAGE
Medical – Successful	2	3.03%
Medical – unsuccessful followed by salpingectomy	2	3.03%
Salpingectomy	36	54.5%
Salpingectomy + opposite tubal ligation	5	7.5%
Partial salpingectomy	2	3.03%
Bilateral salpingectomy	3	4.5%
Salpingectomy + oophorectomy	2	3.03%
Oophorectomy	1	1.5%
Salpingectomy + resection of rudimentary horn	1	1.5%
Laparoscopic salpingectomy	3	4.5%
Salpingectomy + D&C	3	4.5%
Cornual wedge resection	3	4.5%
Only exploratory laparotomy/tubal abortion	3	4.5%

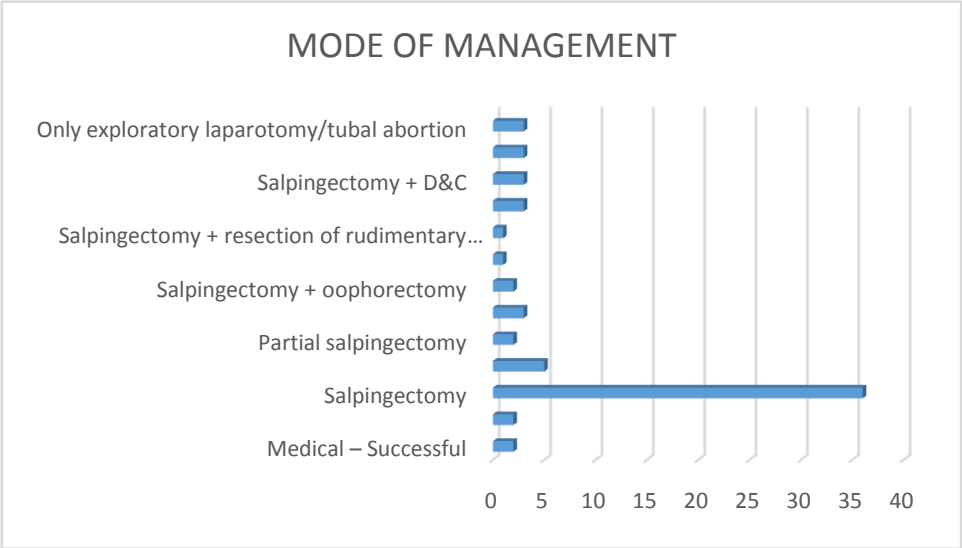

Figure 6 – Distribution of cases based on management

Surgical management with salpingectomy was done in majority of cases (54.5%), oophorectomy in 2 cases, corneal wedge resection in 3 cases, salpingectomy with resection of rudimentary horn in 1 case, negative laparotomy in 3 cases, and medical management in 4 and was successful in only 2 cases.

Table 7– Distribution of cases based on site of ectopic pregnancy

SITE OF ECTOPIC	NUMBER	PERCENTAGE
Ampulla	30	45.4%
Cornual	3	4.5%
Isthmic	7	10.6%
Interstitial	5	7.5%
Fimbrial	9	13.6%
Ampullo-isthmic	6	9%
Ovary	2	3.03%
Rudimentary horn of bicornuate uterus	1	1.5%
Tubal abortion	3	4.5%

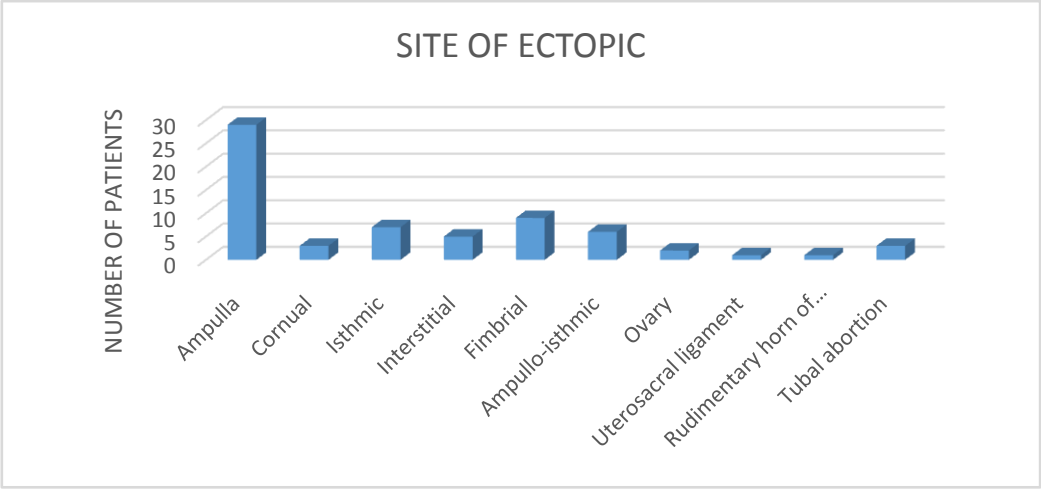

Table 7– Distribution of cases based on site of ectopic pregnancy

The commonest site of ectopic pregnancy was seen in ampulla (45.4%), 13.6% in fimbria, 10.6% in isthmus, 2 in ovaries and 1 in rudimentary horn of bicornuate uterus.

Table 8– Distribution of cases based on estimated loss

ESTIMATED BLOOD LOSS	NUMBER	PERCENTAGE

<500ml	38	57.5%
500 – 1000ml	19	28.7%
1000 -2000 ml	7	10.6%
>2000 ml	2	3.03%

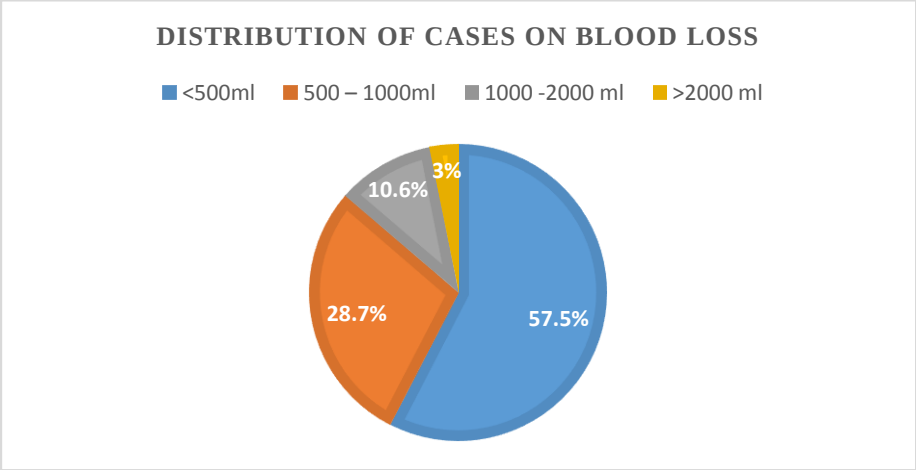

Figure 8– Distribution of cases based on blood loss
About 57.5% had blood loss of <500ml and 3% had blood loss of >2000ml.

Maternal morbidity and outcome was studied by duration of hospital stay of >10 days in 15% women, need for blood transfusion in 39.3%, ICU admission in 15.15%. No maternal mortality was encountered in this study.

DISCUSSION

Ectopic pregnancy is a life threatening emergency leading to maternal death. The incidence of ectopic pregnancy in this study was 2.8% which was similar to study done by Dheepthikaa SK et al (2020)with incidence of 3% [4].

Ectopic pregnancy may occur at any age from menarche to menopause. A study by Soren M et al found maximum cases in age group of 21-30 years (55.6%) which corroborated with the present study (65%) [5]. This may be because this is the period of maximum fertility and infrequent use of contraception.

In this study the maximum incidence of ectopic pregnancy was seen in multiparous women. However According to ICMR Multicentric Case Control Study (1990) of ectopic pregnancy, majority of women were young and had low parity [6].

Mean gestational age in this study is was 7.3weeks which was similar to study done by Tahmina S et al [7].

In this study 22.7% of women did not have any risk factors. Among women with risk factors, abortion with D&C was a major risk factor in 37.8% followed by PID in 16.6% cases. This finding was in conjunction with the findings of Shukla DB et al [8].

The predominant symptom was abdominal pain seen in 78.7 % of cases. Similar results were present in a study conducted by Shetty S et al (2014), and Dinesh Pal Yadav (2016), which are consistent with the present study[9,10]Amenorrhea was present in 93.9% of women and the classical triad was present in 33.3% cases in this study.

In the present study, 93.93% were ruptured, 6.06% unruptured and 4.54% heterotopic pregnancies. In a study done by Mamata S et al, 47.2% of cases were ruptured and 27.8% were unruptured and tubal abortion accounted for 23.6% cases [5], whereas in our study tubal abortion was seen in 3 cases only.

Most of the cases were managed surgically and a salpingectomy was performed in 86.3% of cases which was similar to study done by Tahmina S et al [7]. In this study, Oophorectomy was done in 2 cases, corneal wedge resection in 3 cases, salpingectomy with resection of rudimentary horn in 1 case, negative laparotomy in 3 cases. Medical management was attempted in 4 cases and was successful only in 2 were they proceeded with salpingectomy. Laparoscopic salpingectomy was done in 3 cases.

91% of ectopic pregnancy was seen in fallopian tube and ampulla was the most common site, noted in 45.4% cases in the present study. Same was noted by Rashmi Gaddagi et al and Lawani et al in their respective studies [11, 12]. 2

cases were seen in ovary and 1 in rudimentary horn of bicornuate uterus. Heterotrophicpregnancies were noted in 3 cases in the present study.

Maternal morbidity and outcome was studied in terms of blood loss of >1000ml seen in 13.6% of cases, duration of hospital stay of >10 days seen in 15% women, need for blood transfusion in 39.3%, ICU admission in 15.15%. No maternal mortality was encountered in this study.

CONCLUSION

The incidence of ectopic pregnancy has increased dramatically during the last three decades. It continues to be a significant challenge in obstetrical practice due to its bizarre clinical presentation and is one of the major cause of maternal deaths within the first trimester. Thus high index of suspicion, early diagnosis and management are required to reduce maternal morbidity and mortality. Mass education regarding safe abortion practices, risks of unsupervised usage of MTP pill and post abortal care should be promoted. Prevention and prompt treatment of PID and genital infections should be done. Risk of ovulation induction and tubal surgeries should be educated to avoid ectopic pregnancies.

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