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A Prospective Study of Ectopic Pregnancy in A Tertiary Care Hospital

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Abstract
Introduction: *Ectopic pregnancy is a condition where in a fertilized ovum implants outside the normal uterine cavity. It is an important cause of maternal morbidity and mortality especially in developing countries where majority of the patients present to the clinician in a late life threatening state with altered and deteriorated hemodynamics. It is also a cause of fetal wastage and has been associated with recurrence and impairment of subsequent fertility.*
Materials and methods: *This was a prospective study conducted in the Department of Obstetrics and Gynecology, Govt Medical College, Ananthapur from January 2018 to December 2019. Out of 3998 diagnosed cases of ectopic pregnancy 45 were selected at random. Patients presenting with pain abdomen, amenorrhea, vaginal bleeding were included in this study. Then culdocentesis and urine pregnancy test were carried out in hemodynamically unstable patients and those who were stable USG was done. Subsequently emergency laparotomy was done in hemodynamically unstable patients with provisional diagnosis of ruptured ectopic pregnancy. Only the cases of ectopic pregnancy confirmed by laparotomy were included in this study.*
Results: *Total number of deliveries during present study period was 3998 and number of ectopic pregnancies was 40. Incidence of ectopic pregnancies during this period was 40 /1000 deliveries. The incidence of ectopic pregnancy is higher in 31 to 40 years of age. Youngest age was 18 years and highest age limit was 42 years. Highest incidence in the age group of 31 to 40 years denotes the peak of the fertile period after marriageable age*
Conclusion: *All patients in present study presented late following rupture or tubal abortion. so all patients underwent laparotomy and total salpingectomy. Hence there is a need of education and awareness creation among women of reproductive age regarding risk factors and early warning symptoms of ectopic pregnancy.*
Key Words: *Ectopic pregnancy, salpingectomy, morbidity and mortality*

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I. Introduction

Ectopic pregnancy is a condition where in a fertilized ovum implants outside the normal uterine cavity. It is an important cause of maternal morbidity and mortality especially in developing countries where majority of the patients present to the clinician in a late life threatening state with altered and deteriorated hemodynamics. It is also a cause of fetal wastage and has been associated with recurrence and impairment of subsequent fertility.[1]

Etiology of ectopic pregnancy most of the times remains uncertain although multiple risk factors have been attributed for its occurrence. It is observed that the frequency of ectopic pregnancy has been on an upstroke during last few decades owing to the increased incidence of venereal diseases, increased usage of contraceptives, short birth spacing interval and increased usage of assisted reproductive techniques. Prior surgical interventions (laparotomy for previous ectopic pregnancy/tubectomy/cesarean section /appendectomy) may lead to tubal damage and increase the risk of further chances of ectopic pregnancy.[2]

Diagnosis of ectopic pregnancy is almost always being a challenging task as the condition is complicated by a bizarre spectrum of clinical presentations ranging from a symptomatic cases to acute abdomen to hemodynamic shock.[3] Hence it is imperative to take accurate history, conduct meticulous physical examination along with judicious use of available diagnostic techniques for diagnosis and management of this condition.[4,5] Thanks to advances in modern medical technology such as radio-immunoassay of β-HCG, Ultrasonography and diagnostic laparoscopy which made diagnosis comparatively easier. Improvement of blood transfusion facilities, provision of better transport facilities, immediate resuscitation, modern anesthesia facilities along with meticulous surgery are the key stones of success in reducing the maternal morbidity and mortality in cases of ectopic pregnancy.[6,7]

II. Materials And Methods

This was a prospective study conducted in the Department of Obstetrics and Gynecology, Govt Medical College, Ananthapur from January 2018 to December 2019. Out of 3998 diagnosed cases of ectopic pregnancy 45 were selected at random. Patients presenting with pain abdomen, amenorrhea, vaginal bleeding were included in this study. Then culdocentesis and urine pregnancy test were carried out in hemodynamically unstable patients and those who were stable USG was done. Subsequently emergency laparotomy was done in hemodynamically unstable patients with provisional diagnosis of ruptured ectopic pregnancy. Only the cases of ectopic pregnancy confirmed by laparotomy were included in this study.

Patient characteristics like age, parity and risk factors for EP were noted. Mode of diagnosis, management modality, complications and need for blood transfusion were also recorded. The primary outcome measures studied were incidence of EP, their risk factors, mortality and morbidity in these women.

Statistical analysis

Data was entered in MS excel spreadsheet and analysed using SPSS software version 19.0. For categorical variables, data was compiled as frequency and percent. For continuous variables, data was calculated as mean±SD.

III. Results

Total number of deliveries during present study period was 3998 and number of ectopic pregnancies was 40. Incidence of ectopic pregnancies during this period was 40 /1000 deliveries.

Age Group (In years)	N (40)	Percentage
18-20	**04**	**10**
21-30	**15**	**37.5**
31-40	**18**	**45**
>40	**03**	**7.5**

Table 1: Age distribution

Table 1 shows that the incidence of ectopic pregnancy is higher in 31 to 40 years of age. Youngest age was 18 years and highest age limit was 42 years. Highest incidence in the age group of 31 to 40 years denotes the peak of the fertile period after marriageable age.

Parity	N (40)	Percentage
Nulliparous	10	25
1	12	30
2	15	37.5
>3	03	7.5

Table 2: Parity

Table 2 shows that a major group of cases were of second parity (37.5%). Nulliparous women constitute 25 % of cases and 76.3 % were parous women. Adoption of contraceptive measures like IUCD, progesterone only pills, permanent tubal sterilisation might be contributing towards the higher incidence in parous women than nulliparous. On the other way round, those who were not using any type of contraception might be adopting unwanted pregnancy termination and subsequently developing subclinical pelvic inflammation which is a casual factor for tubal ectopic pregnancy.

Risk factors	N (40)	Percentage
PID	03	7.5
Sterilisation (tubectomy)	8	20
H/O infertility	7	17.5
H/O abortion	12	30
Current contraception	1	2.5
CS	6	15
H/O ectopic pregnancy	2	5
Other abdominopelvic surgery	1	2.5

Table 3: Risk factors

Table 3 shows risk factors of ectopic pregnancy. In this study history of (h/o) previous abortion was found in 30 % of cases. Out of 12 women having h/o abortion, 6 (50%) had induced it medically or surgically and 6 (50%) had spontaneous abortion. In the group of women having h/o induced abortion 6 had induced it for

≥2 times. Next common risk factors in the line were previous tubal sterilization (24.7%), having caesarean section ≥1 time (17.2 %) and having h/o infertility (16.1%). History suggestive of PID was taken when all the three symptoms i.e., abdominal pain, fever, vaginal discharge were present. Only 5.3 % of women had PID according to this criteria.

Type	N (40)	Percentage
Chronic	6	15
Acute	34	85

Table 4: Type of ectopic pregnancy

Table 4 shows most of the cases presented as acute ectopic pregnancy 85% and 15% cases presented as chronic ectopic pregnancy. No unruptured ectopic pregnancy was there in the study period. Being a tertiary care center the acute cases with haemodynamic instability might have been referred from lower centers for better care.

Clinical Presentation	N (40)	Percentage
Amenorrhea	25	62.5
Pain Abdomen	35	87.5
Bleeding P/V	11	27.5
Vomiting	12	30
Syncope	7	17.5
Shock	8	20
UPT positive	31	77.5
USG	14	35

Table 5: Clinical Presentation

Table 5 shows majority of women presented with pain abdomen (87.5%), amenorrhea (62.5%), bleeding p/v (27.5%). Many presented with vomiting (30%), syncopal attack (17.5%) and shock 20%. Urine pregnancy test (UPT) was positive in 77.5% cases. Therefore 31.2% of patients presented before the missed period. Pallor was a significant finding in 64.5 % of cases who required blood transfusion.

Site of ectopic pregnancy		N (40)	Percentage
Tube			
Side	Right	21	52.5
	Left	18	45
Site	Ampulla	20	50
	Isthmus	7	17.5
	Interstitium	-	-
	Cornual	6	15
Ovary		3	7.5

Table 6: Site of ectopic pregnancy

Table 6 shows that right side tubal pregnancy is more common than left side. Most common site of ectopic pregnancy was in ampulla of fallopian tube 50%. Isthmic tubal pregnancy was seen in 17.5% and 15% cases had cornual pregnancy. Only 7.5 % had ovarian pregnancy.

Morbidities	N (40)	Percentage
Shock	7	17.5
GA	13	32.5
BT	20	50
ICU Admission	-	-

Table 7: Distribution according to different morbidities

Table 7 shows blood transfusion was required in 60 (64.5%) cases. 7 (17.5%) women presented with shock. Total number of maternal deaths were 54 and 4 deaths were caused due to ectopic pregnancy. So maternal mortality rate due to ectopic pregnancy was 3.27%.

Treatment		N (40)	Percentage
Salpingectomy	U/L	31	77.5
	B/L	7	17.5

	Salpinge oopherectomy	1	2.5
	Oopherectomy	1	2.5

Table 8: Distribution according to modality of treatment

Table 8 shows all patients underwent laparotomy. One had oophorectomy for ovarian pregnancy and two had salpingeoopherectomy for ovarian pregnancy along with adnexal adhesion. All but 2 of the cases treated with B/L salpingectomy had previous tubal sterilisation.

IV. Discussion

Incidence of ectopic study in present study is 40/1000 deliveries. In india the frequency of ectopic pregnancy was 0.58% of deliveries. The incidence of 1.1% of deliveries in a Nigerian study. Frequency of ectopic pregnancy in Pakistan was 1.3% of total 3252 pregnancies. The incidence of ectopic pregnancies of 7.4/1000 deliveries in Bangladesh.[8] In a study by Sethy S, incidence of ectopic pregnancy was 5.6/1000 deliveries in india. In a study conducted by Gaddagi R and Chandrashekhar AP, the incidence was 1:399 pregnancies.[9] In Porwal S et al study, the incidence was 2.46 per thousand of deliveries. The incidence of EP was 0.91% in a study by tahmina. The increase in incidence is associated with rise in the incidence of sexually transmitted infections (STIs) and salpingitis, advances in assisted reproductive technology, tubal surgeries, female contraception and earlier diagnosis with more sensitive methods.[10]

EP accounts for 3.5-7.1% of maternal mortality in India. Maternal mortality in present study is 3.27%. More cases were seen between age group 21-30 years (54.8%) in present study which is similar to other studies conducted by Tuli AG et al, Spandana N et al.[11]

The most important cause of ectopic pregnancy is damage to the tubal mucosa may be due to infections, which could obstruct embryo transport due to scarring. In present study 46.2% had previous H/O abortions. In a study by Tuli AG et al, it was 28.5%. In Asuri et al study PID accounts for 25.6% of ectopic pregnancy. In Tahmina et al 15.3% and Porwal S et al it is 15.3% and 47.5% respectively.[12]

In the present study abdominal pain and amenorrhea were present in 96.8% and 68.8% of cases respectively. Gaddagi et al obsereved that 89.2% presented with pain abdomen, 75.7 % with amenorrhoea and 43.2 % with spotting per vaginum. In present study all cases were managed surgically, and a salpingectomy was performed by laparotomy as present hospital is a tertiary level hospital and all patients referred were hemodynamically unstable. Most studies reported a similarly high rate of surgical management.[13]

V. Conclusion

All patients in present study presented late following rupture or tubal abortion. so all patients underwent laparotomy and total salpingectomy. Hence there is a need of education and awareness creation among women of reproductive age regarding risk factors and early warning symptoms of ectopic pregnancy. High degree of suspicion on basis of risk factors at primary level of health care delivery system and early diagnosis with essential aids like transvaginal ultrasound and serial ß hCG estimation, timely intervention in the form of medical and surgical treatment will help in reducing the morbidities like blood transfusion, exposure to general anaesthesia, laparotomy, consequences on future fertility and mortality associated with ectopic pregnancy and to improve the future reproductive outcome.

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