

International Journal of Biomedical Research

ISSN: 0976-9633 (Online); 2455-0566 (Print)

Journal DOI: <https://dx.doi.org/10.7439/ijbr>

CODEN: IJBRFA

Original Research Article

Study of ectopic pregnancy in reference to diagnostic and treatment modalities

Trina Karmakar* and Nootan Chandwaskar

Department of Obstetrics and Gynecology, Sri Aurobindo Medical College, PG Institute, Indore, India

QR Code

***Correspondence Info:**Dr. Trina Karmakar,
Department of Obstetrics and Gynecology,
Sri Aurobindo Medical College, PG Institute, Indore, India***Article History:****Received:** 07/03/2017**Revised:** 25/03/2017**Accepted:** 25/03/2017**DOI:** <https://dx.doi.org/10.7439/ijbr.v8i4.4003>**Abstract****Introduction:** An ectopic pregnancy occurs when a fertilized ovum implants outside the normal uterine cavity. It is the most important cause of maternal mortality and morbidity in the first trimester. Our aim is to explore the role of various diagnostic aids and treatment modalities in suspected & unusual cases.**Materials & methods:** Department of Obstetrics & Gynaecology, Sri Aurobindo medical college & post graduate institution, Indore, MP from April 2014 to July 2015. All patients included in the study were diagnosed with ectopic pregnancy, in reproductive age group of 15-49 years. Total 50 patients participated in the study. A pre structured and pre tested questionnaire was used to know age, parity, risk factors & modes of presentation of ectopic pregnancy.**Result:** Urine pregnancy test was positive in 45 (90%) of the cases. Ultrasonography diagnosed complex adnexal mass in 94% of the patients. Periodic Serum β -hCG done in 10 (20%) cases, The commonest site of ectopic pregnancy was fallopian tube in 48(96%) cases. Salpingectomy was the most commonly performed radical surgery (74%cases).Medical management was successful in 66.6% cases. Laparoscopic management was successful in 84.61% cases. Conventional Laparotomy was successful in 100% cases.74% patients had undergone salpingectomy, among which 20%) cases were successfully managed by laparoscopy, whereas 8% cases were successfully managed by methotrexate. 82% cases required blood transfusion. Significant anaemia (Hemoglobin <8g%) in 30 (60%) patients and Blood transfusions in 41 (82%) cases**Conclusion:** early diagnosis using various methods and management & treatment plan governs the outcome in case of ectopic pregnancy**Keywords:** Ectopic pregnancy, diagnostics, management & treatment.**1. Introduction**

Ectopic pregnancy is an important contributor to maternal mortality, morbidity and early fetal wastages.[1] Worldwide, ectopic pregnancy (EP) remains the leading cause of maternal death in the first trimester.[2] Risk factors include previous tubal surgery, previous ectopic pregnancy, genital infections, assisted reproductive technology, previous abortion, elderly age, smoking, intrauterine device, and progesterone only pills.[3] Fallopian tube is the most common area of ectopic implantation representing 97% of cases.[4]

Other areas include ovarian, cervical and abdominal pregnancies. The clinical manifestations of

ectopic pregnancy complicate the diagnosis because of their broad spectrum of presentations ranging from asymptomatic condition to acute abdomen with hemodynamic shock. Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed.[3] The classic clinical symptoms are: abdominal pain, amenorrhea and vaginal bleeding. Serum β -HCG levels, serum progesterone levels, ultrasound examination are remain to be some of the diagnostic modalities for confirming ectopic pregnancy. The treatment of ectopic pregnancy includes medical or surgical methods.[5]

A life-threatening surgical emergency in a woman

with a positive pregnancy test and haemodynamic shock has been converted to a non-urgent medical condition in many cases. The development of algorithms for diagnosis and medical management using MTX has allowed one third of EP's to be managed without surgery.[6] Despite improvements in prompt diagnosis of this potentially fatal condition there are avoidable factors in over half of the associated deaths. EP remains responsible for 6% of maternal deaths which mainly occur after an acute initial presentation. The study carried out to explore the role of various diagnostic aids and treatment modalities in suspected & unusual cases.

2. Material & methods

The present study is a descriptive case series, which is prospective in nature, carried out in the Department of Obstetrics & Gynaecology, Sri Aurobindo medical college & post graduate institution, Indore, MP from April 2014 to July 2015. All patients included in the study were diagnosed with ectopic pregnancy, in reproductive age group of 15-49 years. Total 50 patients participated in the study. The diagnosis of ectopic pregnancy was based on history, clinical examination and investigations. The samples were selected by using purposive sampling. A pre structured and pre tested questionnaire was used. All diagnosed cases of ectopic pregnancy outside the specified age group, were excluded from the study. All diagnosed cases of ectopic pregnancy in which study subjects were not willing to participate in the study were excluded. A detailed history and clinical evaluation was done. Written informed consent was taken from all patients enrolled in the study.

The clearance from the Institutional Ethics committee of Sri Aurobindo medical college & post graduate institution, Indore, MP, was obtained. The descriptive statistics was used. Results on continuous measurements were presented as Mean \pm SD (Min-Max) and results on categorical measurements were presented in numbers (%).

3. Result & discussion

During the study of 15 months (from April 2014 to July 2015) Clinico pathological study of 50 cases of ectopic gestation was carried out. The observations of Clinico pathological parameter are as follows:

Table 1: Ectopic pregnancy and Age distribution

Age groups	No. of Cases	Percentage
20 or less	5	10
21-25	22	44
26-30	18	36
31-35	3	6
>35	2	4

Out of 50 cases, the maximum no. of cases that is 22(44%) were in age group of 21 to 25 years and minimum cases were in the age group above 35 years. The observation was that the incidence of ectopic pregnancy decreased with advancement of age. The youngest patient included in the study was of 18 years and the oldest was of 37 years. (Table No. 1) Majority of patients (44%) were between 21 to 25 years of age. Parrazini *et al* [7] reported the highest number of ectopic gestation in age group of 26 to 30 years. Most of the women in India marry at an early age and completes their family at an early age. This age corresponds to the age of peak sexual activity and reproduction.

Table 2: Modes of presentations

Presentation	No. of Cases	Percentage
Amenorrhoea	40	80
Abdominal Pain	47	94
Vaginal Bleeding	24	48
Nausea/ Vomiting/ Dizziness/ Giddiness	17	34
Shock	7	14
Abdominal Tenderness	40	80
Forniceal Tenderness/ Cervical Motion Tenderness	25	50
Pallor	23	46
Tachycardia	17	34

In present study, Abdominal Pain was the most common symptom seen in 47 (94%) cases. The classical triad of abdominal pain, Amenorrhea, and Vaginal Bleeding was present in 24 cases (48%). Abdominal Pain and Amenorrhea were present in 40 cases (80%). 17 cases (34%) of Patients presented with tachycardia. 7 cases (14%) presented with shock suggestive of major volume of blood loss. The classical triad of abdominal pain, Amenorrhea, and Vaginal Bleeding is present in 24 (48%) cases. This is correlating with the study done by Gupta *et al* [8].

Table 3: Diagnostics findings

Urine pregnancy test Result (UPT)	No. of cases	Percentage (%)
Positive	45	90%
Delayed Positive	4	8%
Negative	1	2%
SERUM β-hCG		
Done	10	20
Positive	10	100
Negative	-	-
Ultrasonography of pelvis		
Positive	47	94%
Negative	3	6%

UPT was performed in all cases and found to be positive in 90% cases. It was delayed positive in 8% of cases while Urine pregnancy test was negative in 2% of the

cases. Negative UPT does not rule out Ectopic Pregnancy. These were explained as chronic ectopic pregnancy which correlated with the study done by Gaddagi *et al* [9].

Serum B-hCG was done in 20% cases with 100% positive results. In healthy pregnancy, the B- HCG doubles in every 2-3 days and increases until peak during 9 to 12 weeks. In ectopic gestation the hCG level is low, however fall below that range conclude missed abortion/ incomplete abortion/ ectopic gestation.

Ultrasonography of pelvis is specific and useful tool for confirmation of Ectopic Pregnancy.[10] In 94% cases have the sonographic confirmation of ectopic pregnancy, while 3 (6%) cases have diagnostic query specially in cases of unruptured ectopic pregnancy which present as adnexal mass/chronic ectopic. UPT and pelvic USG both are found to be very useful tools for confirmation of ectopic pregnancy. Abdominal sonography was done in all patients but in cases of doubt, Trans vaginal sonography was done which was confirmatory.

Figure 1: Degree of anemia

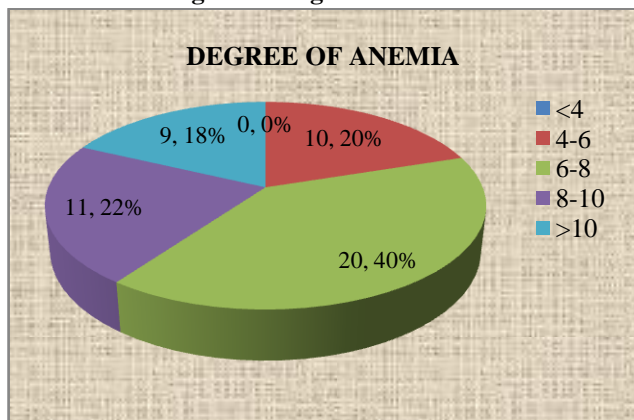


Table 4: Units of blood per patient

Units of Blood Given	No. of patients
3 BT	7
2 BT	20
1 BT	14

Significant anaemia (Hb less than 8 gm %) was detected in 30 cases (60%). The Blood transfusions were given to 41(82%) patients. Among these, total 7(17.07%) patients required 3 units of blood, 20 (48.78%) patients required 2 units of blood (maximum no. of patients). 1(34.14%) patients required only 1 unit of blood. It has been observed that maximum number of patient’s required at least 2 units of blood transfusion. This signifies the role of rapid volume correction to compensate the massive blood loss. This was possible only because of availability of well-equipped blood bank and has reduced morbidity and mortality to great extent. Studies have shown that low haemoglobin and haematocrit values, together with higher gravidity at the time of admission, may indicate an increased risk of tubal rupture [11].

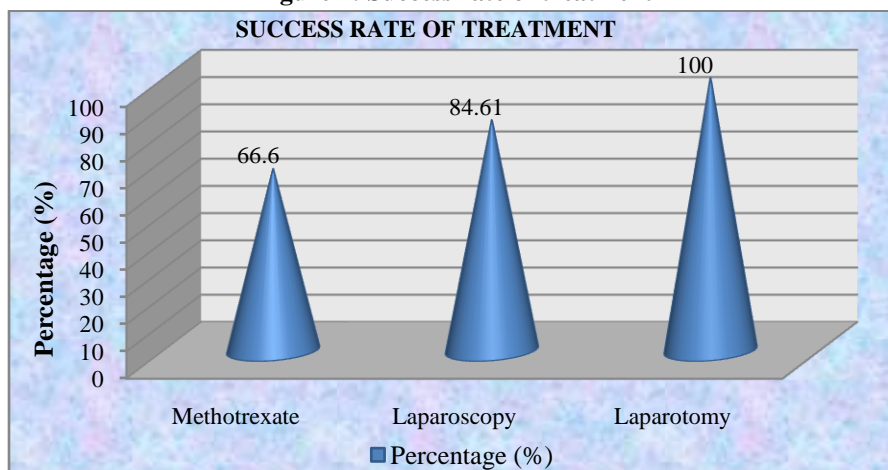
Table 5: Management & treatment

Treatment	No. of cases	Percentage
Surgical Management		
•Laparotomy	35	70
•Laparoscopy	13	26
Medical Treatment		
•Methotrexate	6	12
Surgery		
Salpingectomy	37	74
Salpingo-oophorectomy	6	12
Salpingotomy	2	4
Excision of rudimentary horn	1	2
Site of ectopic pregnancy		
Tubal	48	96
Rudimentary horn	1	2
Heterotopic	1	2
Tubal sites		
Ampulla	36	72
Isthmus	10	20
Infundibulum	1	2
Interstitial	1	2

Conventional Laparotomy was done in hemodynamically unstable 35 (70%) cases with ruptured ectopic pregnancy who were hemodynamically unstable. Laparoscopy was done in 13(26%) cases, of which, in 2 (4%) cases, it was converted to laparotomy. 6 (12%) patients were managed with medical management. Surgical technique followed in these patients is as follows: Out of these 92% who explored Salpingectomy was performed in 37 patient (74%). Salpingo-oophorectomy was performed in 6 patients (12%). Salpingotomy was performed in 2 patients (4%) and excision of rudimentary horn was done in 1 patient (2%) Stromme *et al* [12] reported salpingectomy as treatment of choice for tubal ectopic in 47.14% of cases.

The tube is the commonest site for implantation of ectopic pregnancy. 48 (96%) cases of ectopic pregnancy were tubal pregnancies. 1 (2%) cases had ectopic pregnancy in rudimentary horn of uterus. There was one case of heterotopic pregnancy who conceived after in vitro fertilization with three embryos transferred. Laparoscopic salpingectomy was done for removal of tubal ectopic pregnancy, while allowing normal intrauterine pregnancy to continue. Studies have shown that in a natural conception cycles, heterotopic pregnancy is a rare event, occurring in <1/30,000 pregnancies.[13]

Ampulla was the commonest site for ectopic pregnancy, in 36 (72%) cases. Isthmus was the 2nd most common site of tubal ectopic pregnancy in 10(20%) cases. There was one case (2%) of interstitial pregnancy. In 96% of the cases the fallopian tube is the commonest site for implantation of ectopic Gestational sac. Our results were same as Yakasai *et al* [14]

Figure 2: Success rate of treatment

Success rate of methotrexate treatment was 66.6%, as out of 6 cases 2 required laparotomy. In 13 cases laparoscopy was performed, amongst which two cases required laparotomy. Hence Success rate of laparoscopy was 84.61%. Our success rate was compared with Hoover *et al* [6]. To obtain 100% success rate in medical treatment patient selection should be proper as per the guidelines for medical management of ectopic pregnancy. The high index of suspicion is to ensure for early and timely diagnosis and management, a timely intervention can result in a successful outcome of intrauterine pregnancy and prevent tubal rupture and hemorrhagic shock which can be fatal.[15]

No maternal mortality was reported in present study. There is an increase in the incidence of ectopic pregnancy and decrease in maternal mortality due to ectopic pregnancy during the past few decades.

4. Conclusion

Earlier diagnosis, improved resuscitative measures & availability of 24 hr blood banks and better antibiotic coverage, good operative techniques & facilities all these factors govern the outcome in case of ectopic pregnancy.

References

- [1] Farquhar CM. Ectopic pregnancy. *Lancet* 2005; 366:583–91.
- [2] Autry AM. Medical treatment of ectopic pregnancy: is there something new? *Obstetrics & Gynecology*. 2013; 122 (4): 733-734.
- [3] Barnhart KT, Sammel MD, Gracia CR, *et al*. Risk factors for ectopic pregnancy in women with symptomatic first trimester pregnancies. *Fert Steril*. 2006; 20:1.
- [4] Boyer J, Coste J, Fernandez H, Pouly JL, Job –Spira N. Sites of ectopic pregnancy: a 10 year population based study of 1800 cases. *Hum Reprod* 2002; 17: 3224.
- [5] RCOG. The management of tubal pregnancy: evidence based guideline No. 21. London: Royal College of Obstetricians and Gynaecologists Press; 2004
- [6] Hoover KW, Tao G and Kent CK. Trends in the diagnosis and treatment of ectopic pregnancy in the United States. *Obstetrics & Gynecology* 2010; 115 (3):495-502.
- [7] Parazzine F, Tozzi L, Ferraroni M, Bocciolone L, La Vecchia C, Fedele L. Risk Factors for Ectopic Pregnancy: An Italian Case-Control study. *Obstet Gynecol*.1992; 80(5): 821-6.
- [8] Gupta R, Porwal S, Swarnkar M, Sharma N, Maheshwari P. Incidence, trends and risk factors for Ectopic Pregnancies in a tertiary care hospital of Rajasthan. *J Pharm Biomed Sci*. 2012; 16(07): 1-3.
- [9] Gaddagi RA, Chandrashekhar AP. A Clinical Study of Ectopic Pregnancy. *JCDR* 2012; 6: 867-869
- [10] Murray H, Baakdah H, Bardell T, Tulandi T. Diagnosis and treatment of ectopic pregnancy. *CMAJ*. 2005; 173(8): 905-12
- [11] Knafel A, Basta P, Skotniczny K, Paweł M, Krzysztof B, Rokita W, Obrzut B, Wicherek Ł. Ectopic pregnancy rupture--can it be prevented? *Ginekol Pol*. 2009; 80(10):734-9.
- [12] Stromme WB. Conservative Surgery for Ectopic Pregnancy a Twenty-Year Review. *Obstet Gynecol*. 1973; 41(2): 215-23.
- [13] Ludwig M, Kaisi M, Bauer O, Diedrich K .Heterotopic pregnancy in a spontaneous cycle: do not forget about it! *Eur J Obstet Gynecol Reprod Biol*. 1999; 87(1):91-3.
- [14] Yakasai IA, Abdullahi J, Abubakar IS. Management of Ectopic pregnancy in Aminu Kano teaching hospital Kano Nigeria: A 3-year Study. *Global Advanced Research Journal of Medicine and Medical Sciences* 2012; 1(7):181-5.
- [15] Espinosa PM, Alcantar Mendoza MA. Heterotopic pregnancy: Report of a case and review of literature. *Ginecol Obstet Mex*. 1997; 65:482–6.