Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/18728
DOI URL: http://dx.doi.org/10.21474/IJAR01/18728

RESEARCH ARTICLE

RISK FACTORS, CLINICAL PRESENTATION AND TREATMENT MODALITIES OF ECTOPIC PREGNANCY: A CROSS SECTIONAL STUDY AT TERTIARY CARE HOSPITAL

Divya Gehlot[1] and Suman Meena[2]

1. Third Year Post Graduate Resident, Department of Obstetrics and Gynaecology, J K Lon Hospital, Government Medical College, Kota (Raj.) India.
2. Professor, Department of Obstetrics and Gynaecology, J K Lon Hospital, Government Medical College, Kota (Raj.) India.

Manuscript Info

Manuscript History
Received: 19 March 2024
Final Accepted: 25 April 2024
Published: May 2024

Key words:-
Amenorrhea, Ectopic Pregnancy, Methotrexate, Risk Factors, Salpingectomy

Abstract

Background: Ectopic pregnancy is a pregnancy anywhere other than uterine cavity. Approximately 1-2% pregnancies are ectopic associated with significant morbidity and mortality. Fallopian tube is the commonest site. Present study deals with the analysis of risk factors, clinical presentation and treatment modalities of ectopic pregnancy.

Material and Method: A cross sectional study was carried out on 100 cases which were diagnosed and treated at Department of Obstetrics and Gynaecology, J K Lon Hospital, Government Medical College, Kota (Raj.), India. Parameters studied were age, parity, gestation period (weeks), risk factors, clinical presentation, medical management and surgical intervention.

Results: Present study included 100 cases in which 72% belonged to age group of 19-30 years. Maximum cases were recorded between parity 0 and 2. Previous abortion (33%) was the most common risk factor. Most of the patients had ruptured (54%) ectopic pregnancy outcome. Tenderness was a common clinical feature on abdominal examination. Medical management was done for 11 patients of which 9 cases were successfully treated (81.8%). In 64% cases, emergency laparotomy with unilateral salpingectomy was applied as surgical intervention.

Conclusion: Diagnosis of ectopic pregnancy is a challenging task by its bizarre clinical picture as it is clinically ranging from asymptomatic case to acute abdomen to hemodynamic shock. It is imperative to take close examination with use of advance diagnostic tools and management. Most of the patients of ectopic pregnancy presented ruptured outcome and period of amenorrhea was significantly associated with it. Early diagnosis and advance management would reduce the morbidity and mortality in ectopic pregnancy.

Introduction:-

Ectopic pregnancy (EP) is a potentially life threatening gynaecological emergency in which blastomere implants outside the uterine cavity. EPs occur in 1-2 % of all naturally conceived pregnancies and is associated with

Corresponding Author:- Divya Gehlot
Address:- Third Year Post Graduate Resident, Department of Obstetrics and Gynaecology, J K Lon Hospital, Government Medical College, Kota (Raj.) India.

significant morbidity and mortality, worldwide especially in developing countries where majority of patients present to the clinicians in a late life threatening state with altered and deteriorated hemodynamics.[1-3] EPs may be tubal, non-tubal or heterotropic pregnancy and atleast 90% of all are located in fallopian tube and among these 80% are present in the ampullary segment of the tube.[1,4] In non-tubal pregnancies, oocytes are fertilized at the site other than the fallopian tube or the oocyte can be fertilized within the fallopian tube but extruded into the peritoneal cavity.[5,6] Heterotropic pregnancies are extremely rare and primarily associated with assisted reproductive technology treatment. It refers to the coexistence of an intrauterine pregnancy with an ectopic pregnancy.[7,8]

The classic clinical triad of ectopic pregnancy is amenorrhea, pain abdomen and bleeding. Bleeding from the ruptured fallopian tube owing to EP in the first trimester of pregnancy, is the most common cause of maternal morbidity.[9,10] Multiple risk factors have been attributed to its occurrence among these, pelvic inflammatory disease is the most common and other include use of progesterone-only pills, intrauterine contraceptive devices (IUD), endometriosis, previous abortion, in vitro fertilization, previous history of ectopic pregnancy, assisted reproductive technology and smoking.[11]

Diagnosis of Ectopic Pregnancy is challenging task by its bizarre clinical picture for obstetrician and gynecologist as it is clinically ranging from asymptomatic case to acute abdomen to hemodynamic shock.[12] Hence, it is imperative to take close examination with judicious use of available diagnostic techniques for diagnosis and management of such condition. Treatment options of EP include available facilities of medical management, laparoscopy and laparotomy which depend on patient's clinical condition, geographical location, desire to reproduce, ultrasound findings, site of ectopic and βHCG measurement.[13] Laparoscopic salpingectomy or open salpingectomy is the ideal surgical management.[14]

Despite significant decline in EP related morbidity and mortality, there is still a paucity of information on the risk factors, clinical presentation and the most appropriate treatment modalities. Therefore, present study was undertaken to study these parameters for the medical and surgical management of EP to enhance maternal survival and conservation of reproductive capacity.

Material and Methods:-

A cross sectional study was conducted on 100 cases which were diagnosed and treated as ectopic pregnancy at Department of Obesterics and Gynaecology, J K Lon Hospital, Government Medical College, Kota (Raj), India - a tertiary care hospital. The medical records of all 100 cases were retrieved from the Obstertrics and Gynaecology Department and confidentiality of the patient data were ensured during the review process.

Collected data included details of age, parity, presented symptoms, detailed past obstetric history, genital infections, previous surgical procedures if any, associated risk factors, site of ectopic pregnancy, laterality and other post operative complications. The collected data was tabulated and analysed using appropriate statistical methods.

Results:-

In the present study, 100 cases of ectopic pregnancies were analysed in which 72% belong to the age group of 19 - 30 indicating that it is a disease of reproductive age group. Maximum cases were recorded between parity 0 and 2 and peak incidence (43%) was observed among the women during their second pregnancy (table 1). For highest number of cases, gestation period was observed to be around 9 weeks (35%).

Among all cases studied with respect to site of ectopic pregnancy, the most common was ampullary (66%) region of fallopian tube followed by fimbrial (14%), isthmal (11%) and cornual (7%) and least in ovarian region (1%). Risk factors were observed in 59% of all the cases studied and previous abortion (33%) was most common followed by tubal surgery (14%), H/O infertility (6%) PID (5%) and least in IUCD (1%).

At presentation, 54% presented with ruptured ectopic, 30% unruptured ectopic and 16% tubal abortion (table 2). Common symptoms to be observed were, amenorrhea, pain abdomen and bleeding in all cases. In ruptured and unruptured EP, amenorrhea (92%) was most common followed by pain abdomen (81%) and bleeding (55%) whereas in tubal abortion, pain abdomen was the most common followed by amenorrhea and bleeding, along with these symptoms 42% patients of ruptured, 18% patients of unruptured and 50% patients of tubal abortion also had other risk factors like nausea, vomiting, sudden fainting attacks etc. Tenderness was a common clinical feature of

abdominal examination recorded in all the three ectopic pregnancy outcomes followed by distension and guarding. Patients with EP received surgical (91%) or medical management (9%). Management was decided on the basis of mode of presentation, abdominal examination, vitals of patient, type and size of ectopic and HCG values. HCG < 3500 and size < 4 cm were recruited for medical management and it was done with methotrexate for 11 cases of which 9 cases were success (81.8%). In 64% cases, emergency laparotomy with unilateral salpingectomy was applied as surgical intervention (table 3).

Discussion:-

Ectopic pregnancy is still a challenge before obstetrician and gynecologist inspite of advanced diagnosis and management facilities. In present study, patient having ectopic pregnancy belonged to the age group of 19-30 years i.e. the period of maximum fertility and use of contraception is infrequent and occasional among women of this age group. Behera et al. also reported 54.8% ectopic pregnancy in age group of 21 - 30 years.[15] It may be due to early age marriage in India and fewer pregnancy is expected beyond the age of 30 years. Soper suggested functional and anatomic age related changes of the fallopian tubes and also repeated pelvic inflammatory disease that may induce tubal damage and predispose women to ectopic pregnancy.[16]

Maximum cases of ectopic pregnancy were reported between parity 0 and 2 in the present study. Similar results were observed by Andola et al.[17] and Sindhura et al.[18] Sindos et al. found a positive association between parity and ruptured ectopic pregnancy following their retrospective analysis of 19 years of archived data on ectopic pregnancy in Athens, Greece.[19]

Ectopic gestational mass generally increases with increase gestational age and ruptured becomes more likely when the size of it outgrows the fallopian tube. Ampulla of fallopian tube was the most common site as observed in the present study, is similar to Bouyer et al. finding.[20] Shaikh et al. noticed right fallopian tube as most common site of occurrence of ectopic pregnancy than the left tubal pregnancy and ampullary part of it was the most frequent site reflects in 48% of the cases.[21]

The most common risk factor recorded being previous abortion (29%) among all patients and 41% had no risk factor. Such results have also been observed in the similar study by various researchers.[21,22] Shah et al. study revealed risk factors presented in 60.5% of patients.[23]

Period of amenorrhea at diagnosis in maximum number of patients, was observed to be around 9 weeks. It was higher in patient presenting with ruptured ectopic pregnancy than those with unruptured and tubular abortion. Amenorrhea, pain abdomen and bleeding were seen in all the three pregnancy outcomes. Incidence of ruptured ectopic pregnancy was observed to be higher in the present study which is similar to study by Wakankar et al.[24]

Amenorrhea was found to be most common in ruptured and unruptured and in tubal abortion, pain abdomen was the most common presentation of ectopic pregnancy. Goyaux et al. recommended ectopic pregnancy should be considered as a critical public health indicator in developing countries.[25] Mindjah et al. suggested that well equipped health care facility is necessary for early diagnosis of ectopic pregnancy.[26]

Tenderness was found to be most common abdominal finding followed by distension and guarding in all patients studied. Similar results were found by Rashmi and chandrashekhar[27] and Andola et al.[17]

Patient with ectopic pregnancy received surgical and medical management. Success rate was determined by the HCG value and size of ectopic. Methotrexate was prescribed to arrest the growth of ectopic pregnancy leading to eventual involution. Emergency laparotomy with unilareal salpingectomy was the most common surgical intervention applied in the present study.

Conclusion:-

In the present study, most common age group of ectopic pregnancy was between 19 -30 years and maximum cases were found during parity 2. Triad of symptoms i.e. amenorrhea, pain abdomen and bleeding were present in most of the cases. Occurrence of ruptured ectopic pregnancy was much more than unruptured ectopic pregnancy and tubal abortion. Previous abortion was found to be a major risk factor. Success rate of medical management was determined by the β HCG value and size of ectopic and methotrexate was used as treatment. In most of the cases,

surgery was the treatment modality as majority of cases were referred and came late to the hospital after the ectopic pregnancy had ruptured. Early diagnosis and intervention would reduce the morbidity and mortality in ectopic pregnancy. A good understanding of the treatment, eligibility criteria and necessary follow up can help clinician for ensuring patient safety.

Table 1:- Characteristics of Patient Studied.

Characteristics	Number of Patients	Percentage
Age group		
19-22	16	16
23-26	42	42
27-30	30	30
31-34	6	6
35-38	4	4
39-42	2	2
Parity		
0	15	15
1	25	25
2	43	43
3	8	8
>3	20	20
Period of Amenorrhea (weeks)		
≤4		
5	1	1
6	1	1
7	3	3
8	8	8
9	21	21
10	35	35
11	28	28
12	2	2
	1	1
Site of Ectopic Pregnancy		
Ampullary	66	66
Fimbrial	14	14
Isthmic	11	11
Cornual	7	7
Ovarian	2	2
Risk factors		
Tubal surgery	14	14
Previous abortion	33	33
H/O infertility	6	6
PID	5	5
IUCD	1	1
Previous ectopic pregnancy	0	0
No risk factor	41	41

Table 2:- Presentation and Examination of Ectopic Pregnancy Outcome.

Ectopic pregnancy outcome	Ruptured (54)	Unruptured (30)	Tubal abortion (16)	P
Mode of presentation				
Amenorrhea	92%	83%	57%	P>0.05
Pain abdomen	81%	59%	78%	P<0.05
Bleeding	55%	68%	56%	P<0.001
Others	42%	18%	50%	P<0.001

Abdominal examination				
Tenderness	68%	60%	56%	P>0.05
Distension	64%	48%	22%	P>0.05
Guarding	52%	28%	27%	P>0.05

Table 3:- Surgical Management.

Procedure	Number of cases	Percentage
Unilateral salpingectomy(open)	64	64
Unilateral salpingo-oophorectomy (open)	8	8
Salpingectomy with contralateral tubal ligation (open)	13	13
Salpingo-oophorectomy with contralateral tubectomy (open)	6	9
Medical Management	9	9

Reference:-

1. Shaw JLV, Dey SK, Critchley HOD, Horne AW. Current knowledge of the aetiology of human tubal ectopic pregnancy. Human Reproduction Update.2010;16(4):432–444.
2. Marion LL, Meeks GR. Ectopic pregnancy. Clinical Obstetrics and Gynecology. 2021;55(2):376–386.
3. Panti A, Ikechukwu NE, Luckman OO, Yakubu A, Egondu SC, Tanko BA. Ectopic pregnancy at Usmanu Danfodiyo University Teaching Hospital Sokoto: a ten year review. Ann Niger Med. 2012;6(2):87–91
4. Omokanye LO, Balogun OR, Salaudeen AG, Olatinwo AW, Saidu R. Ectopic pregnancy in Ilorin, Nigeria: A four year review. Nigerian Postgraduate Medical Journal. 2013;20(4):341–345.
5. Moawad NS, Mahajan ST, Moniz MH, Taylor SE, Hurd WW. Current diagnosis and treatment of interstitial pregnancy. American Journal of Obstetrics and Gynecology. 2010;202(1):15–29.
6. Poole A, Haas D, Magann EF. Early abdominal ectopic pregnancies: a systematic review of the literature. Karger Publishers. 2012;74(4):249–260.
7. Luo X, Lim CED, Huang C, Wu J, Wong WSF, Cheng NCL. Heterotopic pregnancy following in vitro fertilization and embryo transfer: 12 cases report. Archives of Gynecology and Obstetrics. 2009;280(2):325–329.
8. Noor N, Parveen S, Bano I. Heterotopic pregnancy with successful pregnancy outcome. Journal of Human Reproductive Sciences.2012;5(2):213-214.
9. Chan JW. Acute bilateral simultaneous PION after ectopic pregnancy-related haemorrhage. Eye. 2006;20:745-747. doi:10.1038/sj.eye.6702009.
10. Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: A systematic review. Lancet. 2006;367:1066-1074.
11. Goller JL, Livera AMD, Rebecca JG, et al. Rates of pelvic inflammatory disease and ectopic pregnancy in Australia, 2009-2014: Ecological analysis of hospital data. Sex Transm Infect. 2018;94:534–541.
12. Jonathan S. Berek, Deborah L. Berek. Berek & Novak's Gynecology. 17th edition. Lippincott, Williams & Wilkins, A Wolters Kluwer Business, USA.2022:p1250.
13. Panelli DM, Phillips CH, Brady PC. Incidence, diagnosis and management of tubal and nontubal ectopic pregnancies: A review. Fertil Res Pract. 2015;15(1):15.
14. Chundakkadan MS, Chandramathy K, Selvest N. Clinical presentation and outcome of ectopic pregnancy. Int J Rep Cont Obs Gyn. 2021;10(9):3301-3306.
15. Behera A, Ghadei R, Bal RN. A clinical study of ectopic pregnancy in a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2018;7(11):44-61.
16. Soper DE. Pelvic inflammatory disease. Obstet Gynecol. 2010;116:419-428.
17. Andola S, Kumar R, Desia R M, Krutika SA. Study of risk factor and treatment modilities of ectopic pregnancy. Journal of Family Medicine and Primary Care. 2021;10(2):724-729.
18. Sindhura M, Sailatha R, Famida AM, Vijayalakshmi K, Sathiya S, Renuka S. Trends in ectopic pregnancy: A retrospective clinical study of 79 cases. Int J Reprod Contracept Obstet Gynecol. 2017;6(7):3009-3013.
19. Sindos M, Togia A, Sergentanis T. N. et al., Ruptured ectopic pregnancy: risk factors for a life-threatening condition. Archives of Gynecology and Obstetrics. 2009;279(5):621–623.
20. Bouyer J, Saurel-Cubizolles M. J, Grenier C, Aussel L, Job-Spira N. Ectopic pregnancy and occupational exposure of hospital personnel. Scandinavian Journal of Work, Environment and Health. 1998;24:98-103.
21. Shaikh SB, Jampala S, Devi S S, Mallika M. A study of ectopic pregnancy in a tertiary care teaching hospital. Ind. J. obs. Gyn. Res. 2016;3(2):132-136.

22. Khaleeque F, Siddiqui RI, et al. Ectopic pregnancies: A three-year study. J Pak Med Assoc.2001;51(7):240-243.
23. Shah N, Khan NH. Ectopic pregnancy: Presentation and risk factors. J Coll Physicians Surg Pak. 2005;15(9):535-538.
24. Wakankar R, Kedar K. Ectopic pregnancy-rising trend at Indira Gandhi Government Medical College, Nagpur. Int J Sci Stud. 2015;3(5):18-22.
25. Goyaux N, Leke R, Keita N, and Ponneau. Ectopic pregnancy in African developing countries. Acta Obstetricia et Gynecologica Scandinavica. 2003;82(4):305-312.
26. Mindjah YAA, Essiben F, Foumane P, Dohbit JS, Mboudou ET. Risk factors for ectopic pregnancy in a population of Cameroonian women: A case-control study. PLoS One. 2018;13(12). e0207699. doi:10.1371/journal.pone.0207699.
27. Rashmi A, Gaddagi RA, Chandrashekhar AP. A clinical study of ectopic pregnancy. J Clin Diagn Res. 2012;6:867-869.