

Ectopic Pregnancy; Risk Factors, Pattern of Presentation and Management

Khadija Waheed and Sara Ejaz

Background: To determine the risk factors, pattern of presentation and management of ectopic pregnancy in our set up. This study is a descriptive study, from June 2005 to June 2006 at Gynae Unit-III, Services Institute of Medical Science / Services Hospital, Lahore.

Patients and Methods: Sixty cases of ectopic pregnancy presenting at Gynae Unit-III Services Hospital, Lahore were included. An elaborate work up plan was formulated for all patients, which included history, clinical examination, investigation and treatment.

Results: The most common risk factor for ectopic pregnancy was found to be pelvic inflammatory disease. The most common pattern of presentation in ectopic pregnancy was p/v bleeding and lower abdominal pain. 75% patients showed B-hCG levels more than 1500 mIU/ml and rest of them had less than 1500 mIU/ml. Adnexal mass was seen on transvaginal scan in 85% patients. 18.3% patients were given medical treatment. 81.6% patients were given surgical treatment.

Conclusion: Ectopic pregnancy is a life threatening condition in early pregnancy. Timely diagnosis and appropriate treatment can reduce the risk of maternal mortality and morbidity related to ectopic pregnancy.

Keywords: Ectopic pregnancy, B-hCG levels, abdominal scan and transvaginal scan.

Introduction

Ectopic pregnancy (EP) is any pregnancy that occurs outside the uterine cavity. 97% of ectopic pregnancies occurs in the fallopian tube. While 3% of them can be in cervix, uterine cornu, ovary and abdominal cavity.^{1,2} Its incidence varies from community to community, generally it is 1 in 200 pregnancy.³ It is usually found in women above 35 year of age and in races other than white.⁴ Risk factors most commonly associated with EP includes previous EP, pelvic inflammatory diseases (PID), previous tubal surgery, smoking, infertility previous use of intra uterine contraceptive device (IUCD), in vitro fertilization (IVF), congenital anomalies of tube, gross pelvic pathology and in utero exposure of DES (Diethyl still bestrol).^{4,5,6}

The usual pattern of presentation in women of ectopic pregnancy is triad of amenorrhea of 6-8 weeks, abdominal pain and vaginal bleeding.^{1,7,8}

A diagnostic tool of choice for EP is ultrasound.

Other important tests for EP are urine for pregnancy test, B-hCG levels and occasionally curettage and progesterone levels.^{1,8,9}

Medical and surgical both techniques are available for treatment of EP, keeping in view criteria's for each technique.

The main purpose of conducting this study was to have data related to EP in our set up, which can help us

in reducing maternal mortality and morbidity due to EP in our set up.

Patients and Methods

This hospital based, descriptive study was carried out in Gynae Unit-III Services Hospital, Lahore from June 2005 to June 2006. Inclusion criteria for this study were 15-45 years of age, all patients which were cooperative and ready for repeated follow up. A comprehensive proforma was designed to enter detailed record for each patient. After taking informed consent from patients for using their data, detailed history was taken with emphasis on evaluation of EP. This included history of amenorrhea and its duration, usual features of pregnancy (e.g nausea, breast tenderness etc.), p/v bleeding, abdominal pain, abdominal swelling and history of risk factors for EP. Patients were examined for positive signs and their severity.

Routine investigations including complete blood picture, urine for pregnancy test. After routine investigations, special investigations including B-hCG levels and transvaginal scan were done. Diagnosis of EP was made on basis of history, examination and investigations. Mode of treatment for EP was medical and surgical, which was chosen according to certain established criteria.

Criteria for medical treatment were sac size less than 4cm, no cardiac activity, no free fluid in cul-de-sac B-hCG levels should be less than 1500mIU/ml. Treatment included single IM injection of methotrexate and its dose was calculated from body surface area of patients (50 mg/m²). Then B-Hch levels were checked on day 4 and 7. Those patients in which B-hCG levels failed to fall by more than 15% were given another dose of methotrexate and B-hCG were carried out weekly until undetectable. In patients where B-hCG levels still failed to fall were given surgical treatment.

Criteria's for surgical in EP were presence of cardiac activity, rupture EP, sac size more than 4cm, B-hCG levels more than 1500 mIU/ml, contraindication to methotrexate and un cooperative patients.

Surgical treatment including fimbrial evacuation of fallopian tube, partial salpingectomy and complete salpingectomy.

In fimbrial evacuation sac was milked out from fimbrial end of tube. In partial salpingectomy area of tube with EP was resected, end-to-end anastomosis of tube done. In complete salpingectomy whole of fallopian tube was removed.

Results

According to inclusion criteria of our study 60 patients were diagnosed as cases of EP in Gynae Unit-III, Services Hospital, Lahore from June 2005 June 2006.

In all 60 patients site for EP was found to be fallopian tube.

In this study 25% patients were between 15-25 years of age, 53.3% between 26-35 years and 21.6% between 36-45 years. 63.3% patients were diagnosed for having EP between 6-8 weeks, 26.6% between 8-10 weeks and 10.1% after 10 weeks of gestation.

PID was found to be the most common risk factor. Distribution of cases according to risk factors is shown in **Table-1**.

Table 1: Distribution of cases according to risk factor.

No of Cases	Risk Factors
30%	PID
25%	Unknown
21%	Pre. EP
13%	Pre. IUCD
8%	Pre. Tubal Pregnancy
02%	Combination of risk factors

The most common presenting symptom was vaginal bleeding in 1st trimester. Other

presenting patterns are shown in **Fig.1**.

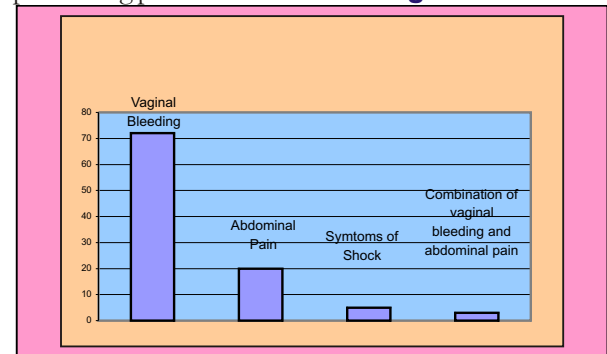


Fig-1: Distribution of cases according to pattern of presentation.

Table-2: Distribution of cases according to B-hCG levels.

No. of Patients	B-cCG levels	Scan	Treatment Given
45 (75%)	More than 1500 ml U/ml	45 (15%) Abdominal	11 (18.3%) Medical
15 (25%)	Less than 1500 IU/ml	15 (85%) Transvaginal	49 (87.6%) Surgical

Discussion

Ectopic pregnancy presents a major health problem for women of childbearing age. It is a result of a flaw in human reproductive physiology that allows the concepts to implant and mature outside the endometrial cavity, which ultimately ends in the death of fetus.

EP currently is the leading cause of pregnancy related death during the 1st trimester in the United States accounting for 9% of all pregnancy related deaths. In UK 13 maternal deaths due to EP was seen, during the period of 1997 1999.

In additional to the immediate morbidity caused by EP, the women's future ability to reproduce may be adversely affected.⁶

Ninety five percent of EP are usually found in fallopian tube while 5% may be found in ovary, cervix, broad ligament, uterine cornu and abdominal cavity. The commonest site in the tube is the ampulla followed by the isthmus. The chances of rupture of EP is more in the isthmus of fallopian tube.⁴

In our study most common riks factor for EP was found to be PID and other common risk factors were previous EP, previous tubal surgery, IVF and previous use of IUCD.^{4,6,11}

Clinical examination is not diagnostic because upto 30% patients with EP have no vaginal bleeding, 10% have palpable adnexal mass and 10% negative pelvic examination.^{1,8} Majority of patients in our study presents with vaginal bleeding after 6-8 weeks of

amenorrhea.^{1,7,8} These findings are non specific and are common in patients who may miscarry.¹ The overall likelihood of EP is 39% in patient with abdominal pain and vaginal bleeding but no other risk factor.¹² So physician should always keep in mind that no combination of examination findings can reliably exclude EP.^{1,13,14}

Diagnostic test for EP include a urine for pregnancy test. Ultra sound; B-hCG measure and occasionally diagnostic curettage. In past serum progesterone levels was also used as diagnostic technique for EP. Table given below summarizes the accuracy rates of diagnostic tests for EP.^{1-9,15,17}

Table 3: Sensitivity and specificity of different diagnostic test.

Diagnostic Test	Sensitivity	Specificity
Transvaginal scan with B-hCG level greater than 1500MIU/ml	67-100%	100%
B-hCG do not increase appropriately	36%	63-71%
Single progesterone level to distinguish EP from non-EP.	15%	>90%
Single progesterone level to distinguish pregnancy failure from intrauterine pregnancy	95%	40%

The mode of treatment in this study were medical and surgical of the basis of certain established criteria. Criteria for medical treatment were;

1. Patient should be reliable and cooperative.
2. Patient should be ready for repeated follow-ups.
3. There should be no cardiac activity on scan.
4. Sac size should be less than 4cm.
5. According to latest RCOG recommendation B-hCG level we used in this study is less than 1500 MIU/ml due to uncooperative and unreliable patients who are not ready for long term follow up.¹⁸⁻²¹

Before starting medical treatment it is explained to patient that there are 15% chances that she may require more than 1 dose of methotrexate, 7% of tubal rupture and she can also suffer from side effects of methotrexate. Medical therapy included intramuscular injection of methotrexate (50mg/m²). The patient who did not respond to methotrexate were

subjected to surgical consultation.²⁸

These days laproscopic surgery is treatment of choice in EP when patients is stable as it is associated with shorter operative time, less intra operative blood loss, short hospital stay and lower analgesic requirements but unfortunately it is still not common in Pakistan.^{29,30}

Criteria for surgical treatment were:

1. Presence of cardiac activity.
2. Ruptured EP.
3. Sac size more than 4cm
4. B-hCG levels more than 1500MIU/ml.
5. Contraindication to methotrexate e.g. liver disease immunosuppression, renal disease.
6. Unreliable and uncooperative patient.
7. Failure of medical treatment.
8. Surgical treatment included fimbrial evocation, partial salpingectomy, compete salpingectomy.

Conclusion

EP is a common and serious problem with a significant morbidity and the potential for maternal death. Many patients have no documented risk factors of EP. Ultra Sound is the initial investigation that should be done in patients with 1st trimester bleeding or pain, intermediate results may be clarified by measurement (single or serial) of the serum B-hCG concentration expert consultation with radiologist and gynaecologist is recommended whenever EP is suspected.

Treatment is according to clinical presentation, serum B-hCG levels and TVS findings, methotrexate intramuscular injection can be given to hemodynamically stable patient, complaint, having on initial B-hCG levels than 1500 Mlu/ml and no ultrasound evidence of any cardiac activity. Patients who do not meet these criteria should be treated surgically.

The choice of treatment should be guided by the patient's preference, after a detailed discussion about monitoring, outcome risks and benefits of two approaches.

*Department of Obst. & Gynae
SIMS/Services Hospital, Lahore
theesculapio@hotmail.com
www.sims.edu.pk/esculapio.html*

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Medical News

Brown Seaweed May be a Fat Fighter

MONDAY, Sept. 11 (HealthDay News) That tasty miso soup you had for lunch may be more than delicious -- it could help you burn away excess That's the conclusion of preliminary research presented Monday at the American Chemical Society's annual meeting, in San Francisco. Researchers led by Kazuo Miyashita, a chemistry professor at the Hokkaido University Graduate School of Fisheries Sciences in Japan, investigated the effects of brown seaweed, *Undaria pinnatifida* -- a type of kelp called wakame that is widely consumed in Japan. They found that fucoxanthin, the brown pigment in the seaweed, promoted a 5 percent to 10 percent in mice and rats by shrinking fat. The compound appeared to stimulate a that causes fat oxidation and conversion of energy to heat. This protein is found in white tissue -- belly fat -- and that means fucoxanthin might be particularly effective at shrinking oversized guts, the researchers hypothesized. Fucoxanthin also stimulated the animals' livers to produce a beneficial that reduces low-density (LDL), the bad that contributes to . "The exciting finding is that fucoxanthin may increase and weight control," said Connie Diekman, director of University Nutrition at Washington University in St. Louis. "But the downside is that this is an animal study, and we can't automatically translate from animals to humans."

Study Questions Value of Very Low Cholesterol Targets

There's no clear evidence that very low levels of low-density lipoprotein (LDL) cholesterol benefit people at high risk for heart disease. Instead, the emphasis should be on getting more of these patients to take statin drugs, says a U.S. study. In recent years, some experts have recommended very low levels of LDL ("bad") cholesterol (70 milligrams/deciliter) for some high-risk patients, even if it means having to take multiple medications to achieve that goal, noted researchers at the University of Michigan Health System and VA Ann Arbor Healthcare System. To determine the validity of this approach, the study authors reviewed research on LDL cholesterol and heart health. They said they found no scientific evidence to support the ultra-low LDL target.. The researchers concluded that it would be better to concentrate less on cholesterol and to get more people with multiple heart disease risk factors to take statin drugs -- regardless of the patients' cholesterol levels. Statins do lower LDL cholesterol, but it's not clear if this lowering of cholesterol is the reason that help prevent heart attacks, the researchers said. "Our review suggests that we in the medical community have misunderstood the scientific evidence on whether very low LDL is important, or whether adequate doses of statins are what is really important," study lead author Dr. Rodney Hayward, director of the VA Center for Health Services Research and Development, said in a prepared statement. "Current practice guidelines and recommendations often focus on getting LDL as low as possible, but the literature to date doesn't demonstrate that low LDL is what is truly important -- but it does show that statins save lives in high cardiac risk patients regardless of a person's LDL level," said Hayward, who is also professor of internal medicine at the University of Michigan Medical School.