Management options for ectopic pregnancy practiced in a tertiary care hospital of Peshawar

Ghazala shams[1], Madiha Iqbal[1], Sadia Habib[2], Rubina Akhtar[1], Qudsia Kamran[3], Sanodia Afridi[1]

Abstract

Objectives: To determine the clinical presentation and management options for ectopic pregnancy.
Methodology: This was a retrospective observational study. Data was collected from the clinical records of 100 patients who had presented with ectopic pregnancy from March 2014 to March 2017. Their clinical records were checked for management and outcome and data was entered in a pre-designed proforma.
Results: Total number of cases diagnosed with ectopic pregnancy were 100 out of which 10% of cases were treated surgically, 72% were treated medically and 18 % of the cases were managed expectantly with monitoring, reassurance and follow up
Conclusion: If timely diagnosed, ectopic pregnancy can be managed expectantly and medically in almost 70% of cases because of the availability of trans vaginal ultrasound facilities and beta human chorionic gonadotropin (HCG) testing for monitoring and follow up.
Key words: Ectopic pregnancy, Methotrexate, Management.

Introduction

Ectopic pregnancy is pregnancy occurring out side the uterine cavity with incidence rate of 1.9%[1]. It is one of the main causes of maternal death during the first trimester [2] · With recent advances in the management of ectopic pregnancy, early diagnoses with trans vaginal ultrasonography and beta sub unit of HCG has reduced the mortality and morbidity of the condition.[3' 4'5]. Any woman of reproductive age who presents with lower abdominal pain or vaginal bleeding should be suspected and assessed for ectopic pregnancy to reduce the delay in diagnosis and management [6 ' 7 ' 8] . Majority of the ectopic pregnancies occur in the fallopian tube but can be found in cervix, ovary, or abdomen and previous cesarean section scar. Very rarely it can occur in association with normal intrauterine pregnancy called heterotopic pregnancy in which normal uterine pregnancy and ectopic pregnancy exist simultaneously [9 '10 '11]

Borderline ultrasound results should be combined with quantitative beta subunit of HCG levels. If a patient has beta sub unit level of 1,500 miu per mL or greater, but the transvaginal ultrasonography does not show intrauterine pregnancy, ectopic pregnancy should be suspected [12'13]

Appropriate management of patients with non-ruptured ectopic pregnancy may include expectant management, medical management with methotrexate, or surgery, which can be open, or laparoscopic.[14'15]

Expectant management is appropriate only when beta sub unit of b HCG are low and declining. Initial levels determine the success of medical treatment [16 ' 17] Surgical treatment is appropriate for ruptured and hemodynamically unstable patients [18 '19]

Incidence of ectopic pregnancies has increased in recent years and increased from 4.9/1000 pregnancies in 1970 to 9.6/1000in1992. Incidence of ectopic pregnancy in India is 18/1000 and in Bangladesh it is 7.4/1000deliveries.[20'21]

In Pakistan incidence of ectopic pregnancies varies from 1:128 to1: 130 pregnancies. According to the recent report of world population 2019 maternal mortality in Pakistan is 178/100,000 as compared to 276/100,000 10 years ago. Ectopic pregnancy contribution is 1.3% to the maternal mortality and majority of them is because of ruptured ectopic. Incidence of ectopic pregnancy is increasing worldwide and it's because of increased use of Assisted Reproductive technology and increased use of ovulation induction in young girls with normal ovulation and pregnancy after tubal ligation [22'23]

Methodology

This retrospective study was conducted in Hayatabad medical complex .All cases with diagnosed ectopic pregnancy during the time from March 2014 to March 2017 were included and clinical record was reviewed which included ultrasound reports and serial beta HCG levels. Patients were hospitalized during the initial time period for ultrasound and serial beta HCG levels during the treatment. Total no of 100 patients

1 Department of Gynecology, Hayatabad Medical Complex, Peshawar
2 Department of Gynecology, Ayoub Medical Complex, Abbotabad
3 Department of Gynecology, Lady Reading Hospital, Peshawar

Address for Correspondence:
Madiha Iqbal
Department of Gynecology, Hayatabad Medical Complex, Peshawar
drmadiha881@gmail.com

with diagnosed cases of ectopic pregnancy were studied.
Women of any age, parity, history of subfertility, previous treatments for pelvic inflammatory disease (PID), history of previous surgeries all were included.
Patients were hospitalized during the course of the treatment and regular follow-up was done. Monitoring done by serial bHcg levels, liver function tests and renal function tests.
A total of 100 patients with ectopic pregnancy were included. Patients were divided into three groups according to their management plain.
Patients in group A were treated with expectant management who were having bHcg level lees than 1000 miu/land were having adnexal mass less than 3cm and with no fetal cardiac activity and no free fluid in the peritoneal cavity. Patients were followed by serial bHcg level and were discharged after declining levels of b HCG and then follow up continued as out door patients.

Results

Out of hundred 18 patients were managed expectantly (Table 1). Seventy-two patients were treated medically, and criteria for patients who were treated medically were with confirmed ectopic pregnancy and bHcg level was more than 1000 miu/l and were hemodynamically stable (Table2). Patients were given intramuscular injections of methotrexate from single injection of MTX up to maximum of four injections depending upon their response to first injection and bHcg level. Out of seventy-two patients only 12 patients (16.7)% required single injection of MTX, 38 patients (52.8)% required two doses of MTX, eighteen patients (25)% required three doses of MTX and four patients (19)% required four doses of methotrexate. Injection methotrexate (MTX) was given on day 1 and repeating the beta HCG on `day 4 and then day 7. Depending on response of the patient 2nd, 3rd or 4th dose of the methotrexate were repeated. Patients were discharged once asymptomatic or decreasing bHcg levels.
Data was entered in MS excel spreadsheet and analyzed using SPSS software version 19.0.for categorical variables; data was compiled as frequency and percentage.
For continuous variables, (age, parity, clinical presentation, vaginal bleeding, adnexal mass) data was calculated as mean +/- SD.
In this study all cases had typical presentation of ectopic pregnancy with amenorrhea, abdominal pain and per vaginal bleeding and management was decided on the basis of hemodynamic stability, adnexal mass and beta HCG level at the time of presentation (Table 3).
In this study surprisingly only 42% of patients were nulliparous and 58% of the patients were multiparous (Table 4). Contributing and associated factors among the patients with ectopic pregnancy were subfertility 20%, pelvic inflammatory disease 30%, ovulation induction12%, sterilization 10%, previous caesarean section 9%, contraception 6% and other pelvic surgeries were 12% (Table 5).

Table 1: group distribution according to the management options

Total no of cases	Management	100	**%**
Group A N%	Expectant	18	18%
Group B N%	Medical	72	72%
Group C N%	Surgical	10	10%

Table 1: Group distribution according to the management options

Total Number of Cases	**Management**	**O (X)**	**%**	E (x)	**(OX-Ex)**	**$(ox - Ex)^2$**	**$(OX-EX)^2/Ex$**
Group A N%	Expected	18	18%	33.333	-15.333	235.101	7.053
Group B N%	Medical	72	72%	33.333	38.667	1495.137	44.855
Group C N%	Surgical	10	10%	33.333	23.333	544.429	16.333
Total		100					68.241

Observed value = Given

Expected value = 100/ 3

Chi square value= 68.241

H0: All types of management are same

H1: They are not same

Degree of freedom is 3-1 =2

Level of significance = 5%

Critical value = 5.99 (chi-square table value)

We applied chi-square test on the above mention table. Our Null Hypothesis H0 was that all management methods are same. We reject the Null Hypothesis H0 as our value of chi -square is much higher i.e. (68.241) as compared to our critical value of (5.99) so, we accept our Alternative Hypothesis H1on the basis of observed values, that all management methods are not same. As Medical management has highest value of 72% so we conclude that it is best management practice in all.

Total Number of Cases	Management	O (X)	$(x)^2$
Group A N%	Expected	18	324
Group B N%	Medical	72	5184
Group C N%	Surgical	10	100
Total		100	5608

Results: S.D of the sample data show the result of 51.36, which interpret that data is normally skewed, and Group B showing more dominant result. Range of the date is 62, which is closer to Group B who were treated medically.

Table 2: Medical treatment for ectopic pregnancy

	Total no of cases	N= 72	%
1	Single dose of MTX	12	16.7%
2	Two doses of MTX	38	52.8%
3	Three doses of MTX	18	25%
4	Four doses of MTX	4	19%

Table3: Clinical presentation

Variables	Expectant management 18/100	Medical management 72/100	Surgical Management 10/100
Age	28.00 +_2.65	31 +_6.70	32+_ 4.6
Parity	1.44+_ 0.58	1.25+_0.56	1.35+_0.96
Clinical presentation Vaginal bleeding Abdominal pain	18/18 100%	72/72 100%	10/10 100%
Previous ectopic	3/18	8/72	2/10
Ectopic mass size	30+_12.23mm	35+_6.54mm	45+_25mm
Period of gestation according to last menstrual period	6+_1week	8+_1week	7.25+_0.86week
Beta h CG level at the time od diagnosis	3000+_1500iu	4000+_3000iu	5000+_1500iu

Table: 4: Parity

Parity	N (100)	%
Nulliparous	42	42 %
P1	20	20%
P2	23	23%
P3	15	15%

Table 5: Risk factors for ectopic pregnancy

Risk factors	N=100	%
Subfertility	20	20%
Pelvic inflammatory disease	30	30%
Ovulation induction	6	12%
Sterilization	10	10%
Previous caesarian section	9	9%
Previous ectopic	13	13%

Contraception	6	6%
Other pelvic surgeries	6	12%

Discussion

In our study most cases were diagnosed on time and out of those 100 cases almost 72 of them were treated medically and only 10 of them were ruptured at the time of presentation so needing surgical treatment.

All patients were having symptoms of abdominal pain or bleeding so this is very important that in reproductive age patients presenting with amenorrhea and lower abdominal discomfort ectopic pregnancy must be excluded.

Patients who received medical treatment were 72/100. In medical treatment methotrexate was given.

Methotrexate is a folinic acid antagonist, which can be given intramuscular. How frequently it should be administered this depend upon the patient size of gestational sac, and beta hCG levels and single, double or multiple shots can be given.[24,25,26]

In our study 72 patients received medical treatment clinical stability and no hemoperitoneun were the two main criteria for selecting the patients for medical treatment.

All of them were hemodynamic ally stable and out of these only 12 patients

(16.7%) received single shot of methotrexate 50mg/m^2 intramuscular and bHcg was repeated on day 4. 38 patients (52.8%) received 2 doses of methotrexate and 18 (25%) patients received 3 doses and only 4 (19%) patients received 4 doses of methotrexate because of the rising levels of beta hCG and persistence of their symptoms. In another observational study the overall success rate if properly selected women is nearly (90%) [27,28] and results are consistent with our study.

A recent well-con- ducted meta-analysis of single and multidose methotrexate protocols showed multidose to be significantly superior to single-dose methotrexate, with success rates of 241 of 260 (92.7%) versus 940 of 1067 (88.1%; p ¼ 0.035).[29,30]

This study has got results consistent with our study and patients with higher levels of bHcg needs multiple injections rather than single shot.

Women with age group 20 - 28 years had more ectopic then rest of the age groups almost (48%) [31]. Ectopic pregnancies were common in multiparous women than nulliparous women.

In this study we found that earlier diagnosis is the most important thing for the success full medical management and to decrease the maternal mortality and morbidity.[32,33]

In spite of increasing incidence of ectopic pregnancy timely diagnosis and treatment can help in reducing the maternal mortality and morbidity.

Conclusion

Ectopic pregnancy is still a contributor to the maternal mortality and morbidity. In spite of so much recent advances some times it becomes a problem to diagnose a pregnancy of unknown origin. However strong clinical suspicion and earlier diagnoses is the key to successful management.

According to our study If diagnosed on time patient can be managed expectantly or medically with serial bHcg and ultrasound monitoring and sometimes multiple injections of methotrexate may be required to have a successful treatment.

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