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## Frequency of Ectopic Pregnancy in Maternity Teaching Hospital, Erbil city

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### Abstract

**Objective:** Ectopic pregnancy is the most life threatening emergency in pregnancy leading to maternal death. The increase in its incidence and impairment in fertility that it causes are now real concerns. Aim of the study is to assess the frequency of ectopic pregnancy and to evaluate the prevalence of the risk factors and management of outcomes related to ectopic pregnancies.

**Methods:** This retrospective study was done in Maternity Teaching Hospital –Erbil city, Kurdistan region, Iraq over a period of three years, where the medical records of patients with the diagnosis of ectopic pregnancy were reviewed. Data was collected on initial presentation, chief medical complaints, sociodemographic characteristics, past obstetrics and gynecological history, history of previous surgeries (tubal, ovarian and/or uterine), history of infertility and use of ovulation induction and history of contraception was obtained. A total of 272 cases were included in the study.

**Results:** Out of total 75000 deliveries within this period, 272 cases presented with ectopic pregnancy during the specified study period of three years. The mean age of women was  $22.95 \pm 5.6$  years. Multiparous women found to be more prone to ectopic pregnancy The gestational age ranged between 4-12 weeks and the most frequent gestational age was around 6-8 weeks. Eighty seven percent (n=58) had some risk factors, 37% (n=25) had previous spontaneous and medical induced abortions , one death was recorded, which was referral case from Hawler Teaching Hospital internal Medicine department, diagnosed wrongly as acute cholecystitis.

**Conclusion:** This study found that prior history of abortions was the major etiological factor for ectopic pregnancy. Furthermore other factors that were found to be associated were previous pelvic surgery , prior ectopic pregnancy and infertility history and induced conception cycles, may be the result of previous pelvic infection with tubal squeal.

**Keywords:** Risk Factors, Ectopic Pregnancy, Maternity teaching hospital -Erbil

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## Introduction:

Ectopic pregnancy is the most life threatening emergency in pregnancy leading to maternal death.<sup>1</sup> The increase in its incidence and impairment in fertility that it causes are now real concerns. Several risk factors for ectopic pregnancy has been identified<sup>2</sup> including a history of pelvic inflammatory disease (PID), smoking at the time of conception, previous ectopic pregnancy, previous pelvic surgery, induction of ovulation and intrauterine device usage. An understanding of the risk factors for ectopic pregnancy assist in more rapid diagnosis and could result in reduction in the need for surgery and suggest actions to improve prognosis.

The incidence and frequency of ectopic pregnancy is difficult to determine due to several reasons, generally because of improper data collection and data management in our part of world, a wide variability in treatment facilities and resources availability and patient attitude towards getting proper treatment<sup>3</sup>. In such a scenario, this study was conducted to evaluate the risk factors of ectopic pregnancy in patients coming to this hospital.

## Patients and Methods

The study was carried out in the Maternity teaching Hospital-Erbil , Kurdistan region ,Iraq . Data were analyzed retrospectively using the case sheets , operative notes and Statistic unit, the three year period from 1st January 2011 to 31st December 2013.All case notes were retrieved and analyzed for age, parity, , gestational age, ectopic pregnancy risk factors like history of previous abortion, infertility treatment, current use of intrauterine contraceptive device (IUCD), history of previous tubal surgery (i.e. tubal ligation, sterilization reversal), history of appendectomy, ovarian cystectomy, myomectomy, caesarean sections and ovarian induction, or IVF procedure, previous ectopic. The surgeries were performed by specialist/consultant in general gynaecology.

After history and examination, provisional diagnosis was made. Relevant investigations included Complete blood picture (CP), blood group, Serum b-HCG and Ultrasound Pelvis. Other investigations done were Liver function test (LFT\'s), renal function test. Platelet count was done in those patients who were given Methotrexate.

## Results:

Out of total 75000 deliveries at Maternity Teaching Hospital-Erbil, 272 cases presented with ectopic pregnancy during the specified study period of three years. The frequency of ectopic was found to be 1 in 275 deliveries that is 0.36%. The mean age of women was  $22.95 \pm 5.6$  years and only 13.2% (n=36) were more than 30 years old. Twenty four percent (n=16) were primigravida. Multiiparous women found to be more prone to ectopic pregnancy were 64% (n=42). The gestational age ranged between 4-10 weeks and the most frequent gestational age was around 6-8

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weeks, 2 patients were more than 10 weeks of gestation. Eighty seven percent (n=58) had some risk factors, 37% (n=25) had previous spontaneous and medical induced abortions (Table -1), one deaths was recorded, which was referral case from Hawler teaching Hospital internal Medicine department she was admitted their for two days as diagnosed wrongly as acute cholecystitis because her chief complaint was right hypochondrial pain and right shoulder tip pain.

**Table-1** Demographic characteristic of the patients

Parameters		NO.	%
<b>Mean age</b>			
<b>Age</b>	≤30	236	86.8
	>30	36	13.2
<b>Parity</b>	Primigravida	99	36.4
	Multigravida	173	63.6
<b>Gestational age (weeks)</b>	(4-8)	79	29
	9-10	191	70.2
	>10	2	0.73

Twelve percent (n=12) conceived after different methods of assisted reproductive techniques . Four patient had history of use of IUCD, while 21.2% (n=14) had previous pelvic surgery. One patient was operated twice for ectopic pregnancy, three patients had Fibroid uterus..

**Table-2, Risk factors of ectopic pregnancy**

Parameters	No. of cases	
	NO.	%
<b>Previous abortion</b>	17	25.7
<b>IUCD</b>	4	6
<b>Recurrent ectopic</b>	10	15
<b>Previous pelvic surgery</b>	14	21.2
<b>Infertility treatment</b>	12	18.18
<b>Fibroid uterus</b>	3	4.5

## Discussion

The frequency of ectopic pregnancy in this series was 0.36% which is comparable to other studies done in Saudi Arabia<sup>4,5</sup> and India<sup>6</sup> but is comparatively low as compared to other studies<sup>7,8</sup> in Pakistan.

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In the present study we found that ectopic pregnancy more in multiparaous woman, while in study done by Manjhi et al<sup>6</sup> showed increased risk of ectopic pregnancy in primigravida which is conflicting with the results of our study. Bouyer study<sup>9</sup> showed that age plays an important role and increases the probability of exposure to other risk factors. Aging may result in progressive loss of myoelectrical activity along the fallopian tubes. Age related changes in tubal function and tubal diverticula which increases with age, predisposes patient to ectopic pregnancy.<sup>10,11</sup>

The results of our study were comparable with other studies<sup>12</sup> which showed that the risk of ectopic pregnancy increases in women with three or more spontaneous abortions. Bouyer et al<sup>3</sup> found that the risk of ectopic pregnancy was higher only for women who underwent medical induced abortions, they did not find any association for surgical abortion.

The result of present study showed a strong relation between previous ectopic pregnancy and ectopic pregnancy. They are in agreement with results of other studies which demonstrated an elevated risk among women with history of prior ectopic pregnancy.<sup>13,14</sup> Previous caesarean section was found to be associated with the risk of ectopic pregnancy in the present study, Mollison et al in his study<sup>12</sup> examining the relationship between prior mode of delivery and subsequent pregnancy found that women who delivered by caesarean section were less likely to become pregnant again compared with those who had spontaneous delivery and when these women become pregnant again compared with those who had spontaneous vaginal delivery, they were more likely to have ectopic pregnancy than others.<sup>12,15</sup> The underlying mechanism for this association is unclear and may relate to increased risk of pelvic infections and adhesions after caesarean section. Studies<sup>13,16,17</sup> showed that the association between pelvic surgery like appendectomy or prior tubal surgery and ectopic pregnancy may be explained by peritoneal and peritubal adhesions that occur following these surgeries. Risk of ectopic pregnancy increased 2.5-23 fold in patient with history of infertility.<sup>6,16,18</sup> Whereas one study showed conflicting results.<sup>14</sup>

Another important risk factor in causation of ectopic pregnancy; fibroid uterus, was present in 4.5% (n=3) of our patients. Fibroid uterus causes this by distorting uterine anatomy especially if it is blocking cornual ends of uterus.

Several studies showed<sup>9,19</sup> that the risk of ectopic pregnancy increased with the infertility and its duration. The findings of the present study on induced conception cycle are consistent with those reported previously.<sup>16,20</sup> In contrast Oelsner et al<sup>21</sup> found that the cause of ectopic pregnancy treated with gonadotrophins lies in the patients, probable additional underlying tubal disease, and not in the drug.

Current intrauterine device (IUCD) usage was also found to be associated with the risk of ectopic pregnancy in the present study. A meta-analysis found that women becoming pregnant while currently using an IUCD are at increased risk. Bouyer et.al<sup>23</sup> found that IUCD usage itself may have an aetiological role in ectopic pregnancy. This accounts for most of the higher number of ectopic pregnancy for IUCD users when compared with new users.<sup>23-24</sup>

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The present study has some limitations. An important limitation of the study was that no control group was assigned so results cannot be compared. Being a retrospective study some of the important information regarding past gynaecological history of lower abdominal pain and chronic vaginal discharge, which are usual presentations of pelvic inflammatory disease, smoking habit, use and frequency of vaginal douches, detailed history of contraceptive methods used, were missing.

### Conclusion:

1. This study found that prior history of abortions are the major etiological factor for ectopic pregnancy. Further more other factors that were found to be associated were previous pelvic surgery s, prior ectopic pregnancy and infertility history and induced conception cycles, may be the result of previous pelvic infection with tubal squal.
2. If a woman of reproductive age comes with pain in the abdomen, there is a high suspicion of ectopic pregnancy and take seriously unless otherwise proved.
3. Further research into ectopic pregnancy should focus on risk factors common to these conditions.

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