

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20232267>

Original Research Article

## Changing trends of prevalence and presentation of ectopic pregnancy cases admitted in DMCH

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**Received:** 04 June 2023

**Accepted:** 03 July 2023

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### ABSTRACT

**Background:** An ectopic pregnancy occurs outside the uterus and is a relatively common condition among women of childbearing age. Most ectopic pregnancies occur in the Fallopian tube (so-called tubal pregnancies), but implantation can also occur in the cervix, ovaries, and abdomen. An ectopic pregnancy is a potential medical emergency, and, if not treated properly, can lead to death. The aim of the study was to evaluate the changing trends of prevalence and presentation of ectopic pregnancy cases admitted in DMCH.

**Methods:** This study was undertaken among the patients admitted in the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital during the period from October 2012 to March 2013. Clinical evaluation of cases of ectopic pregnancy in terms of sociodemographic factors, presentations, risk factors, examination findings, per operative findings and management offered to the patients. The period from Data was entered in MS Excel and Statistical analysis was done using SPSS-24.

**Results:** Most of the patients were 20-30 years age group and mean age was 28.08±4.24 years. The frequency of ectopic pregnancy was 7.60%. High incidence was found among 0-1 parity (48%) and from a lower socioeconomic status. Commonest presentation was lower abdominal pain (94%), amenorrhoea (100%), P/V bleeding (38%) and syncopal attack (48%). Most of the cases was without contraceptive coverage (60%). Previous history of abortion/MR (50%), history of pelvic infection (30%) and history of D&C (16%) constitute the main bulk of risk factors. Most of the patients managed by laparotomy followed by salpingectomy which is still the standard treatment in many cases.

**Conclusions:** Study has found that previous abortions are major etiological factor for ectopic pregnancy than previous pelvic infection. Most of the patients were managed by laparotomy. The general public should be made aware the sign and symptoms of ectopic pregnancy. Proper and modern diagnostic tools and training program for these should be made available in all tertiary level hospital.

**Keywords:** Ectopic pregnancy, Fallopian tube, Laparotomy, Pelvic infection

### INTRODUCTION

Ectopic pregnancy is a condition where the fertilized ovum gets implanted and develops in a site other than normal uterine cavity. It presents a major health problem for women of childbearing age. Given the potential mortality and reduced subsequent fertility associated with this

condition, the trend toward increased ectopic pregnancy is of serious concern.<sup>1</sup>

Now a days ectopic pregnancy occurs in about 3-4 percent of all pregnancy's worldwide. In some studies, the incidence reported is as high as 16 for 1000<sup>9</sup>. Recent evidence indicates that the incidence of Ectopic pregnancy

has been rising five-fold in USA, two-fold in UK, 5 per 1000 pregnancies in France and 7.06 per 1000 delivery in India.<sup>2</sup> Dhaka Medical College Hospital is a well reputed tertiary referral centre. Unpublished yearly statistics of the department (review of last few years 2007-2011) showed rising incidence of Ectopic pregnancy among the admitted patient. In 2009 the incidence was 2.8% but at 2010 and 2011, it has increased to 6.8% and 6.98% respectively. It shows around two-fold increase. However, at the same time mortality ratio declined by 56.6%, from 1.15 to 0.50 deaths per 100,000 live births between 1980–1984 and 2003–2007; at the current average annual rate of decline, this ratio will further decrease by 28.5% to 0.36 ectopic pregnancy deaths per 100,000 live births by 2013–2017.<sup>3</sup> The ectopic pregnancy mortality ratio was 6.8 times higher for African Americans than whites and 3.5 times higher for women older than 35 years than those younger than 25 years. More ectopics are seen in the lower socio-economic classes (52.04%) than in higher society.<sup>4</sup>

The most common sites of ectopic pregnancies are fallopian tube (95 to 98% of cases) including ampullary (55%) isthmic (25%), fimbrial (17%), interstitial (2%). However, they can occur in other locations such as uterine cornue (22.5%) ovary, cervix, and abdominal cavity.<sup>5</sup> It is more common on the right side. Ectopic pregnancy may be concurrent with an intra-uterine pregnancy (heterotrophic), but these circumstances are rare.<sup>6</sup> It may occur any time from menarche to menopause. One study has conducted that 75% ectopic pregnancy occurs in the age group 20-30 years.<sup>4</sup>

Multiple factors contribute to the relative risk of ectopic pregnancy. The rising incidence is strongly associated with an increased incidence of PID. The incidence of tubal damage increases after successive episodes of PID (i.e., 13% after 1 episode, 35% after 2 episodes, 75% after 3 episodes). History of prior ectopic pregnancy (7- to 13-fold increase), history of tubal surgery and conception after tubal ligation, use of fertility drugs or assisted reproductive technology (4-fold increase), use of an intrauterine device (3-4%), smoking and STD. relative risk of ectopic pregnancy increases with the age of mother, 35-44 years (3-4-fold increase).<sup>7</sup>

Diagnosis of ectopic pregnancy mostly depends on proper history taking and accurate physical examination. The classic signs and symptoms of ectopic pregnancy include short period of amenorrhoea (85%) followed by abdominal pain (100%) and per vaginal bleeding or intermittent bleeding (50%). Fifty percent have a palpable adnexal mass and 75% presented with cervical movement tenderness. Approximately 20% of patients with ectopic pregnancy are haemodynamically compromised at initial presentation, which is highly suggestive of rupture.<sup>7</sup> The early detection of ectopic pregnancy has been done by measurement of serum progesterone and serial beta hCG, direct vision by laparoscopy and transvaginal sonography (TVS). Transvaginal sonography with beta hCG monitoring is the standard for evaluation of ectopic

pregnancy. An ectopic pregnancy should be suspected if TVS shows no intrauterine gestational sac when the beta-hCG level is higher than 1500 IU/L or beta-hCG level plateaus or fails to double in 48 hours.

Management of ectopic pregnancy depends on proper history taking, physical examination, relevant investigations, improvement of general condition of the patient and then specific treatment. specific treatment of ectopic pregnancy is of following types: (i) expectant management, (ii) medical management (use of inj. methotrexate, 20% potassium chloride, prostaglandins, ru486, hyperosmolar glucose, vasopressin and actinomycin), (iii) laparoscopy (if the patient is haemodynamically stable – 35 % of ectopic pregnancy are currently managed laparoscopically), and (iv) laparotomy followed by salpingostomy or salpingectomy and salpingo-oophorectomy. If left untreated, about half of ectopic pregnancy will resolve without treatment. These are the tubal abortions. The advent of methotrexate treatment for ectopic pregnancy has reduced the need for surgery; however surgical intervention is still required in cases where the Fallopian tube has ruptured or is in danger of doing so. This intervention may be laparoscopic or through a larger incision known as a laparotomy.<sup>7</sup>

## METHODS

This is a descriptive type of cross-sectional observational study. This study was carried out on 50 cases the find out about the population including female patients in the Department of Obstetrics and Gynaecology of Dhaka Medical College Hospital, Dhaka, Bangladesh. The duration of the period from October 2012 to March 2013. During the study period all patient who were admitted in Gynae and Obs Department of Dhaka Medical College Hospital and diagnosed as a case of ectopic pregnancy. After collection, the data were checked and cleaned, followed by editing, compiling, coding and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. The choice of treatment was made by the patient after a full discussion with the multidisciplinary team consisting of transfusionists. The data for this study about had been accumulated from patients' medical information. Statistical evaluation of the results used to be got via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

## RESULTS

Table 1 shows incidence of ectopic pregnancy was 7.60%.

Table 2 shows that maximum patients (52%) belonged to age group 26-30 years. Only 3 patients were above the age 35.

Table 3 shows majority 74% were house wife and 20% were service holder.

**Table 1: Total gynae admission during the study period.**

Total Gynae admission	Number of ectopic pregnancy	Percentage (%)
3575	272	7.60

**Table 2: Age distribution of patients (n=50).**

Age in year	Number	Percentage	Mean±SD
20-25	12	24	28.08±4.24
26-30	26	52	
31-35	9	18	
36-40	3	6	
<b>Total</b>	50	100	

**Table 3: Occupational status of the study subjects (n=50).**

Occupational status	Number of cases	Percentage (%)
House wife	38	74
Service	10	20
Student	2	4
<b>Total</b>	50	100

**Table 4: Socioeconomic status (n=50).**

Socioeconomic status	Number of cases	Percentage
Lower class	31	62
Middle class	11	22
Upper class	8	16
<b>Total</b>	50	100.0

Table 4 shows maximum patients (62%) came from low-socio-economic condition.

**Table 5: Relation of parity with ectopic pregnancy (n=50).**

Parity	Number of cases	Percentage
0	11	22
1	13	26
2	17	34
3	5	10
4	4	8
<b>Total</b>	50	10

Table 5 shows ectopic pregnancy was closely related to low parity. The peak incidence was among the 0-1 parity (48%).

All the cases had history of variable period of amenorrhoea (100%) and this was the leading symptom of ectopic pregnancy followed by lower abdominal pain (94%) (Table 6).

**Table 6: Presenting symptoms of ectopic pregnancy (n=50).**

Symptoms	Number of cases	Percentage
Abdominal pain	47	94
H/O of amenorrhoea	50	100
Syncopal attack	24	48
Loss of appetite	10	20
P/V bleeding	19	38
P/V discharge	13	26
Fever	3	6

**Table 7: Contraceptive coverage (n=50).**

Methods	Number of cases	Percentage
None	30	60
OCP	9	18
IUCD	2	4
Barrier method	8	16
Injection	1	2

Table 7 shows that most of the cases (60%) did not practice any contraceptive method.

**Table 8: Signs of ectopic pregnancy (n=50).**

Signs	Number of cases	Percentage
Anaemia	28	56
Cervical excitation test	44	88
Tenderness in pelvis	38	76
Fullness of pouch of douglus	22	44

Table 8 shows majority 88% cases had positive cervical excitation test followed by 76% cases had pelvic tenderness and 44% cases had fullness of pouch of douglus.

**Table 9: Predisposing factors (n=50).**

Risk factors	Number of cases	Percentage
Previous abortion/MR	25	50
Pelvic infection	15	30
Previous C/S	6	12
Previous D&C	8	16
Previous IUCD insertion	3	6
Previous ectopic pregnancy	1	2
Previous tubal ligation	1	2
Previous appendicectomy	1	2
Endometriosis	2	2

Table 9 shows that previous history of abortion/MR (50%), pelvic infection (30%) and D&C (16%) constituted the main bulk of risk factors.

**Table 10: Sites of ectopic pregnancy (n=50).**

Site	Number of cases	Percentage
<b>Tubal</b>		
Isthmus	6	6
Ampulla	44	88
<b>Ectopic sac</b>		
Tube	33	66
Ovary	17	34

Table 10 shows that ampulla was affected in majority (88%) of cases and ectopic sac was found in the tube in most cases (66%).

**Table 11: Types of operation performed (n=50).**

Types of operation	Number of cases	Percentage
<b>Salpingectomy</b>	36	72
<b>Salpingo-ophorectomy</b>	14	28
<b>Total</b>	50	100

**Table 12: Post operative hospital stays (n=50).**

Hospital stays	Number of cases	Percentage
<b>Less than 7 days</b>	44	88
<b>More than 8 days</b>	6	12
<b>Total</b>	50	100

Table 11 shows that in majority of cases salpingectomy was done. Table 12 shows majority of the patients (88%) were discharged within 7 days of hospital stay.

## DISCUSSION

Ectopic pregnancy is an implantation of a fertilized egg outside the uterine cavity. It is an important cause of maternal morbidity and mortality.<sup>8</sup> The incidence of ectopic pregnancy varies greatly throughout the world and incidence is increasing worldwide.<sup>9</sup> The reported incidence of ectopic pregnancy was 3-4% of all pregnancies throughout the world. Studies from Saudi Arabia, reported the prevalence of 0.58-1.13%. The incidence of ectopic pregnancy has been rising fivefold in USA, 2-fold in UK and 7.06 per 100 deliveries in India.<sup>2</sup>

Ectopic pregnancy may occur at any age during the reproductive period. In this study maximum patients (52%) belonged to the age group 26-30 years. The range varied between 20-40 years. Almost similar observation has been made by Archibong et al and Khan et al where showed 79.99% patients in 15-34 years of age group.<sup>10,11</sup> Another study Tom et al found 81.9% were among the age group of 21-30 years.

In this study ectopic pregnancy was found closely related to low parity. The peak incidence was among the 0-1 parity (48%). Airede et al found 32% among nulliparous. American Journal of Epidemiology have shown almost

similar observation 39.5% among nulliparous and 35.6% among primipara.<sup>12</sup> They also showed that higher incidence of ectopic pregnancy was present among women of low parity (para-2). Archibong et al has found that the patients who had delivered 1-4 children were at greatest risk. After that the incidence declines. Khan et al have shown highest incidence among para 1-3 (38%), para-0 (30%), para 3-5 (20%) and para > 5 (12%).

The presenting symptoms of ectopic pregnancy were analyzed. It was found that almost all patients had history of amenorrhoea, 94% had lower abdominal pain, 38% had P/V bleeding and 48% gave history of syncopal attack. This finding consisted with Pradhan et al they found 94.4% had abdominal pain and 72% had ammonorrhoea.<sup>13</sup> Storeide had found that 100% had lower abdominal pain, 81% presented with amenorrhoea and 88% with abnormal vaginal bleeding.<sup>14</sup> This may reflect the fact that our poor patients reach to a tertiary level hospital like DMCH late when the patient's condition is in a very critical stage. Inadequate investigation facilities in the community level may be an important factor which causes delay in diagnosis and medical management.

This study showed physical findings seem to run along with important symptoms. Anaemia could be elicited in 56% cases in this study and majority (88%) of cases had positive cervival excitation test followed by (76%) cases had pelvic tenderness and 44% had fullness of pouch of douglus. Toy et al have shown 91% cases had abdominal tenderness.<sup>15</sup> Khan et al had also shown 80% patients have abdominal tenderness.

Khan et al have shown fullness of pouch of douglas in 80% of cases and positive excitation test in 68% cases. Archibong found that palpable adnexal mass was present in only 2% of cases while positive cervical excitation test was present in 56%.<sup>10</sup> This may be due to the fact that, cases may have been diagnosed earlier due to the presence of better investigation facilities.

Among the risk factors that was identified in this series history of previous abortion/MR (50%), pelvic infection (30%), history of ovulation inducing drugs (29.09%) and history of D&C (16%) constituted the main bulk of risk factors for ectopic pregnancy and H/O taking IUCD (3.63%) came to the next. But no patient had IUCD in situ when presented with ectopic pregnancy. Gharoro et al studied showed 63% had history of previous abortion and 41% had pelvic infection.<sup>16</sup>

Sinnathuria et al believed that infection following induced abortion is major cause of PID in Asia and the risk of ectopic pregnancy is 10 times higher in areas with a high incidence of illegal abortion and 6 times higher following clinical salpingitis.<sup>17,18</sup> Several case control studies have reported a strong association between ectopic pregnancy and chlamydial trachomatis infections and gonococcal infection.<sup>19</sup> Unfortunately our patients were not screened for these organisms. In this study group there was no

patient having history of tubal surgery (except tubal ligation) but in recent meta-analysis it has been shown that tubal surgery carries the highest risk of ectopic pregnancy. Bouyer et al in a large case control, population-based study in France have shown that 1.1% cases had history of previous ectopic pregnancy.<sup>20</sup> So previous history of ectopic pregnancy also a risk factor for recurrent ectopic pregnancy.

This study showed that 72% operation was unilateral salpingectomy and 28% was salpingo-ophorectomy. Airedo et al reported unilateral salpingectomy was the most frequent procedure that was performed.<sup>21</sup> Pradhan et al studied showed 75% were salpingectomy, 22% salpingo-ophorectomy and 3% salpingostomy.<sup>13</sup> Archibong et al has noted that in 90% cases salpingectomy was performed.<sup>10</sup> Most of patients presented with ruptured or grossly damaged tube when conservative treatment where not possible. Another study Khan et al have shown unilateral salpingectomy in 71% cases, unilateral salpingo-ophorectomy in 2% cases, unilateral salpingectomy with other sided tubectomy in 24.66% cases, salpingostomy done in 4 cases, removal of abdominal pregnancy in 4 cases and resection of rudimentary horn in 3 cases.<sup>11</sup>

Several observational studies suggested that expectant management was highly successful in women with ectopic pregnancy who presented with very low HCG values. Most clinicians, however, still consider that all ectopic pregnancies need some form of treatment, and few data exist to compare expectant with medical or surgical treatment. Only one randomised trial has been published to date that compared expectant management with systemic oral methotrexate.<sup>22</sup> The trial is of limited value because the dose of methotrexate that was used much lower than that in standard clinical practice. Another randomised controlled trial is currently under way to compare expectant management with systemic methotrexate in women with unruptured tubal ectopic pregnancies and low serum HCG values.

## CONCLUSION

This study showed that history of short period of amenorrhoea, abdominal pain, P/V bleeding, syncopal attack were common clinical presentations. The main risk factors were history of previous abortion/MR, history of D&C, ovulation inducing drugs. Most of the patients were managed by laparotomy followed by salpingectomy. The frequency can be reduced by awareness of reproductive health care, liberal contraceptive utilization and acceptable adequate family planning method. Early diagnosis and timely referral may be helpful in treating the patients prior to tubal rupture with decreased morbidity and mortality. We believe that there is a window of opportunity to ascertain the exact causes and suggest appropriate interventions to reduce this upward trend of ectopic pregnancy.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Fatema B, Begum M, Zaman F, Aktar S. Changing trends of prevalence and presentation of ectopic pregnancy cases admitted in DMCH. *Int J Reprod Contracept Obstet Gynecol* 2023;12:2327-32.