

EVALUATION OF TREATMENT OUTCOMES FOR ECTOPIC PREGNANCY AT THAI BINH MATERNITY HOSPITAL IN 2024

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ABSTRACT:

Objective: To evaluate the treatment outcomes of ectopic pregnancy at Thai Binh Maternity Hospital in 2024.

Methods: A cross-sectional descriptive study was conducted on 155 medical records of patients diagnosed with ectopic pregnancy (EP) and treated at Thai Binh Maternity Hospital from January 1, 2024, to December 31, 2024.

Results: The average age was 35.1 ± 8.5 years. The age group of 40 and older accounted for the highest percentage (34.19%), indicating that ectopic pregnancy is more common in older women. The main symptoms included vaginal bleeding (80.65%) and abdominal pain (64.52%), while the most common physical symptom was adnexal tenderness (60.6%).

Regarding the β -hCG levels, 29.68% of patients had levels exceeding 5,000 mIU/ml, highlighting the need to monitor this level to assist in diagnosis. Ultrasound results indicated that mixed echogenic mass adjacent to the uterus was present in 77.42% of cases, and fluid in the Douglas pouch was observed in 84.84%, both of which are important signs in the diagnosis of ectopic pregnancy.

In terms of treatment methods, laparoscopic surgery was the most common choice (83.87%), reflecting a modern treatment trend towards less invasive techniques. The condition of the pregnancy mass at the time of surgery also demonstrated the advantages of laparoscopic surgery, especially in cases where the mass was not ruptured (86.67%). These results emphasize the importance of early detection and effective management of complications to improve treatment outcomes for patients.

Conclusion: The study shows that ectopic pregnancy predominantly occurs in older women,

with the highest rate in the age group ≥ 40 . Symptoms of vaginal bleeding and abdominal pain are important warning signs, while ultrasound plays a crucial role in diagnosis. Laparoscopic surgery is the preferred treatment method, demonstrating superior effectiveness in managing this condition, particularly in cases of unruptured masses. The research findings underscore the importance of early detection and close monitoring to enhance treatment efficacy.

Keywords: ectopic pregnancy, fallopian tube, Thai Binh Maternity Hospital.

I. INTRODUCTION

Ectopic pregnancy is an emergency condition in obstetrics that occurs when the embryo develops outside the uterine cavity, primarily in the fallopian tube. This condition can lead to serious complications, including internal bleeding and even death if not diagnosed and treated promptly. According to a study by Mullany (2023) [1], the incidence of ectopic pregnancy is increasing, posing many challenges in management and treatment. Early and accurate identification of this condition is crucial to minimize the risk of complications, as emphasized by Hendriks and colleagues (2020) [2].

Diagnosis of ectopic pregnancy typically relies on a combination of β -hCG testing and transvaginal ultrasound, methods that have been shown to have high sensitivity and specificity according to author Tran Thi Ngoc Bich (2024) [3]. However, according to Tonick and Conageski (2022) [4], selecting the appropriate treatment method, including laparoscopic surgery or medical treatment with methotrexate, remains a significant clinical challenge. Studies have also shown that treatment efficacy may vary depending on the timing of diagnosis and the extent of damage, as noted in the research by Leziak (2022) [5]. In the study by Dinh Thi Minh Hang (2022) [6], it was indicated that laparoscopic surgery yields promising outcomes, but further analysis is needed regarding treatment effectiveness and patient recovery post-intervention.

At Thai Binh Maternity Hospital, researching the treatment outcomes of ectopic pregnancy

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is essential to improve patient care processes. Therefore, this study aims to evaluate the treatment outcomes of ectopic pregnancy at Thai Binh Maternity Hospital, providing recommendations for clinical practice and enhancing the quality of healthcare for women.

II. STUDY SUBJECTS AND METHODS

2.1. Subject, location and study period

Subjects: Study medical records. This study focuses on patients with medical records diagnosed with ectopic pregnancy (EP) and treated at Thai Binh Maternity Hospital from January 1, 2024, to December 31, 2024.

Inclusion Criteria:

Medical records that have been definitively diagnosed with EP and treated with either open surgery, laparoscopic surgery, or medical treatment with Methotrexate (MTX).

Exclusion Criteria:

Patients with ectopic pregnancy combined with intrauterine pregnancy, those who are breastfeeding, allergic to MTX, or have chronic medical conditions that do not allow treatment.

Patients who do not consent to participate or discontinue treatment and transfer to another facility.

Medical records lacking essential information for the study.

Duration and Location: The study will be conducted at Thai Binh Maternity Hospital from January 1, 2024, to December 31, 2024.

2.2. Methods

2.2.1 Study Design: The study is designed as a cross-sectional descriptive study.

2.2.2 Sample Size and Data Collection Method:

Sample Size: The sample size is calculated using the formula for descriptive studies:

$$n = Z_{(1-\alpha/2)}^2 \frac{p(1-p)}{d^2}$$

n: Minimum sample size required for the study.

α: Level of statistical significance (α = 0.05).

Z_(1-α/2) is the reliability coefficient; for α = 0.05, Z_(1-α/2) = 1.96.

III. RESULTS

p: Incidence rate of ectopic pregnancy at the Central Maternity Hospital in 2013, p = 6.67% [9].

d: Desired margin of error between the sample proportion and the population proportion (choosing d = 0.04).

Substituting into the formula, the minimum sample size obtained is n = 150 (medical records).

2.2.3. Research Procedure:

Step 1: Create a sample frame that includes a list of all medical records of patients diagnosed with ectopic pregnancy at Thai Binh Maternity Hospital during the period from January 1, 2024, to December 31, 2024, based on electronic medical records.

Step 2: Randomly select 155 medical records from the established sample frame that meet the inclusion criteria and do not fall under the exclusion criteria. Apply a purposive convenience sampling method.

Step 3: From the 155 selected medical records, collect information regarding clinical symptoms, paraclinical results, and treatment outcomes for patients with ectopic pregnancy.

2.2.4. Variables, Study Indicators, and Assessment Criteria

Variables: Age group, menstrual disorders, vaginal bleeding, enlarged uterus, painful adnexal mass, pain in the posterior Douglas pouch, β-hCG Concentration, ultrasound results...

2.3. Data Entry and Processing:

Data will be entered and processed using SPSS 22.0 software. Continuous variables will be described by mean values and standard deviation, while categorical variables will be described by percentages.

2.4 Research Ethics: The study has been approved by the Scientific Council and the Board of Directors of Thai Binh Maternity Hospital. All medical record information will be kept confidential and used solely for research purposes, with no publication of personal information. The study results will be reported in accordance with regulations and ethical principles.

Table 1. Age Characteristics of the Study Group

Age Group	Quantity	Percentage (%)
< 20	4	2.58
20 – 24	6	3.87

Age Group	Quantity	Percentage (%)
25 – 29	22	14.19
30 – 34	36	23.23
35 – 39	38	24.84
≥ 40	45	29.03
Total	155	100.00
Average Age	35.1 ± 8.5	

The average age of the patient group is 35.1 ± 8.5. The highest proportion belongs to the age groups ≥ 40 (29.03%) and 35-39 (24.84%), indicating that ectopic pregnancy is more common in older women. In contrast, the group under 30 accounts for only 20.64%, highlighting the importance of screening and monitoring this condition in women aged 35 and older to enhance clinical intervention effectiveness.

Table 2. Functional Symptoms

Functional Symptoms	Quantity	Percentage (%)
Menstrual disorders	69	44.52
Vaginal bleeding	125	80.65
Abdominal pain	100	64.52

Vaginal bleeding is the most prevalent symptom (80.65%), serving as an important warning sign. This is followed by abdominal pain (64.52%), which is also a typical symptom in diagnosing ectopic pregnancy. Menstrual disorders (44.52%) are less common but still warrant attention.

Table 3. Physical Symptoms

Physical Symptoms	Quantity	Percentage (%)
Enlarged uterus	9	5.8
Painful adnexal mass	78	50.3
Pain in the posterior Douglas pouch	94	60.6

Pain in the posterior Douglas pouch (60.6%) and painful adnexal mass (50.3%) are the most common manifestations among the 155 patients with ectopic pregnancy, while an enlarged uterus accounts for only 5.8%. These symptoms emphasize the importance of thorough evaluation for timely diagnosis, helping to reduce the risk of complications.

Table 4. β-hCG Concentration at Admission

β-hCG Concentration (mIU/ml)	Quantity	Percentage (%)
< 25	1	0.65
25 – 500	30	19.35
501 - 1000	24	15.48
1001 - 2000	13	8.39
2001 - 5000	34	21.94
> 5000	53	34.19
Total	155	100

The proportion of patients with β-hCG levels above 5,000 mIU/ml is 34.19%, indicating that a significant portion of patients has high β-hCG levels, often associated with ectopic pregnancy or other pathologies.

The group with levels from 25 – 500 mIU/ml accounts for 19.35%, while the group < 25 mIU/ml is only 0.65%. This data underscores the necessity of monitoring β -hCG levels to aid in diagnosis and progress tracking.

Table 5. Ultrasound Results

Ultrasound Results	Quantity	Percentage (%)
Mixed echogenic mass next to the uterus	120	77.42
Presence of embryo and fetal heartbeat	15	9.68
Fluid in Douglas pouch	131	84.52

The mixed echogenic mass next to the uterus is highly prevalent (77.42%), often associated with ectopic pregnancy. The presence of an embryo and fetal heartbeat is observed in only 9.68% of patients, indicating a very low rate in this group. Notably, the presence of fluid in the Douglas pouch (84.84%) is an important sign indicating pathology in the abdominal cavity. These results emphasize the significance of ultrasound in diagnosing and monitoring patient conditions.

Table 6. Treatment Methods

Treatment Method	Quantity	Percentage (%)
Laparoscopic surgery	130	83.87
Medical treatment	20	12.90
Open surgery	5	3.23
Total	155	100.00

Laparoscopic surgery is the most commonly used treatment method, accounting for a high percentage (83.87%), showing that this is the preferred option due to its minimally invasive nature and quick recovery. Medical treatment accounts for only 12.90%, applied to specific cases, while open surgery is very low (3.23%), typically indicated only in cases of severe complications. This data reflects a modern treatment trend leaning towards less invasive methods.

Table 7. Status of the Mass during Surgery

Mass Status	Open Surgery	Percentage (%)	Laparoscopic Surgery	Percentage (%)
Not ruptured	1	0.74	117	86.67
Ruptured	4	2.96	9	6.67
Abortion through the tube	0	0.00	4	2.96
Total	5	100.00	130	100.00

Comment: Laparoscopic surgery clearly dominates in treating ectopic pregnancy, especially in cases where the mass is not ruptured (86.67%). Open surgery is performed very rarely (0.74% for non-ruptured masses and 2.96% for ruptured masses). The condition of abortion through the tube is also rare, with a rate of 2.96% for the laparoscopic surgery group. These results emphasize the effectiveness of minimally invasive treatment methods in managing ectopic pregnancy.

IV. DISCUSSION

The study on the treatment outcomes of ectopic pregnancy at Thai Binh Maternity Hospital has identified several important factors related to this condition, from clinical characteristics and diagnosis to treatment methods. Ectopic pregnancy is a serious obstetric emergency that requires timely detection and treatment to minimize risks for patients.

The research results indicate that the average age of patients is 35.1 ± 8.5 , with the highest proportion in the age group of 35 and older, accounting for 53.67% (including 29.03% in the ≥ 40 group and 24.84% in the 35-39 group). This confirms that older women are at a higher risk for ectopic pregnancy, consistent with previous studies by Mullany (2023)

[1] and Hendriks (2020) [2], which suggest that age is a significant factor in the development of ectopic pregnancy.

The clinical symptoms of ectopic pregnancy at Thai Binh Maternity Hospital show that vaginal bleeding is the most common symptom, reaching 80.65%, followed by abdominal pain (64.52%) and menstrual disorders (44.52%). These are typical symptoms that require attention when diagnosing ectopic pregnancy. According to the study by Tonick and Conageski (2022) [4], vaginal bleeding is often the first sign perceived by patients, and when combined with abdominal pain, it can indicate a high risk of ectopic pregnancy.

Regarding β -hCG levels, the proportion of patients with β -hCG levels higher than 5,000 mIU/ml is 34.19%, indicating that a significant portion of patients with high β -hCG levels is often related to ectopic pregnancy or other pathologies. The research by Tran Thi Ngoc Bich (2024) [3] shows that at the β -hCG cutoff of 1056.7 mIU/mL, the sensitivity is 85% and the specificity is 74.7%, demonstrating that monitoring β -hCG levels is crucial for supporting diagnosis and tracking disease progression.

When considering ultrasound diagnosis, the mixed echogenic mass next to the uterus accounts for 77.42%, while the presence of fluid in the Douglas pouch is 84.84%. This indicates that transvaginal ultrasound is an effective tool for diagnosing ectopic pregnancy. These results are consistent with previous studies, such as that of Chong (2024) [7], emphasizing the role of ultrasound in identifying abnormal signs in the abdominal cavity.

The treatment method for ectopic pregnancy at Thai Binh Maternity Hospital is primarily laparoscopic surgery, accounting for 83.87%. This method is preferred due to its minimally invasive nature and quick recovery time for patients. According to Leziak (2022) [5], laparoscopic surgery has become the gold standard in treating ectopic pregnancy due to its ability to minimize damage to surrounding tissues and improve clinical outcomes. Only 3.23% of patients required open surgery, usually in cases with severe complications.

Regarding the status of the mass during surgery, the study shows that laparoscopic surgery has

a high success rate in treating non-ruptured masses, reaching 86.67%. This result indicates that early detection and timely intervention can reduce the risk of complications. The occurrence of abortion through the tube is rare, at only 2.96% for the laparoscopic surgery group, suggesting that minimally invasive treatment methods are more effective in managing ectopic pregnancy.

Additionally, postoperative monitoring is crucial to ensure the best recovery for patients. According to the study by Houser (2022) [8], monitoring β -hCG levels after surgery is necessary to assess treatment effectiveness and detect potential complications early. This allows doctors to intervene promptly if any abnormal signs appear, thereby enhancing care quality and treatment outcomes [9].

IV. CONCLUSION

The study at Thai Binh Maternity Hospital has clarified the clinical characteristics, diagnosis, and treatment of ectopic pregnancy, providing valuable insights into this condition in the current clinical context. The results indicate that ectopic pregnancy often occurs in older women, particularly in the age group of 35 and above, with typical symptoms being vaginal bleeding and abdominal pain. The use of β -hCG levels and transvaginal ultrasound has proven to be highly effective for early diagnosis, allowing for timely intervention and minimizing the risk of complications. Laparoscopic surgery has been identified as the superior treatment method, with a high success rate and quick recovery time, emphasizing the effectiveness of minimally invasive interventions in managing ectopic pregnancy. These results not only improve healthcare processes for patients but also provide valuable information for future research and clinical practice.

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