Clinical Presentation and Management of Ectopic Pregnancy in Mauritania: A Prospective Two-Center Study.

ABSTRACT

Background: Ectopic pregnancy remains a major gynecological emergency, particularly in resource-limited settings where delayed diagnosis may increase maternal morbidity and compromise subsequent fertility. This study aimed to describe the epidemiological, clinical, diagnostic, therapeutic, and outcome characteristics of ectopic pregnancy in two referral hospitals in Mauritania.

Methods: A prospective descriptive two-center study was conducted over 12 months, from December 1, 2024 to December 1, 2025, in the obstetrics and gynecology departments of Cheikh Zayed Hospital and the Mother and Child Hospital in Nouakchott, Mauritania. Forty patients managed for ectopic pregnancy were included. Data were collected prospectively and analyzed using SPSS version 27.

Results: Forty patients were included. Mean age was 30 years (range 18-40). Twenty-two cases (55%) were managed at Cheikh Zayed Hospital and 18 (45%) at the Mother and Child Hospital. Pelvic pain was the leading presenting complaint. Signs of shock occurred in 17.5% and anemia in 60%. Hemoperitoneum was identified in 57.5%. Methotrexate was administered to 13 patients (32.5%); 12 responded and one failed treatment, corresponding to an observed success proportion of 92.3%. Surgical treatment was performed in 25 patients (62.5%). Ruptured ectopic pregnancy accounted for 80% of cases. Overall outcome was favorable in 85%; severe anemia requiring transfusion was a major complication and one maternal death occurred.

Conclusions: Ectopic pregnancy remains a potentially life-threatening condition in Mauritania. The high proportion of ruptured ectopic pregnancies and predominance of surgery suggest delayed diagnosis and limited opportunities for conservative management. Earlier diagnosis and improved access to transvaginal ultrasonography may increase the use of medical treatment and minimally invasive surgery.

Keywords: ectopic pregnancy; methotrexate; laparotomy; maternal morbidity; Mauritania; prospective study

INTRODUCTION

Ectopic pregnancy is the implantation and development of a pregnancy outside the uterine cavity. Most ectopic pregnancies are tubal, although ovarian and abdominal locations may also occur. It remains an important cause of maternal morbidity and can adversely affect future reproductive outcomes.

Advances in quantitative serum beta-human chorionic gonadotropin (β-hCG) measurement and ultrasonography have facilitated earlier diagnosis, allowing management to range from medical treatment with methotrexate to conservative or radical surgery. Nevertheless, delayed diagnosis continues to contribute to ruptured ectopic pregnancy and emergency surgical management, particularly in resource-limited settings.

UNDER PEER REVIEW IN IJAR

In Mauritania, ectopic pregnancy remains an important gynecological emergency. The objective of this study was to describe the epidemiological, clinical, diagnostic, therapeutic and outcome characteristics of ectopic pregnancies managed prospectively at two referral hospitals in Nouakchott.

METHODS

Study design and setting

This was a prospective descriptive two-center study conducted over a 12-month period, from December 1, 2024 to December 1, 2025. The study was performed in the Departments of Obstetrics and Gynecology of the Centre Hospitalier Mère et Enfant (CHME) and Centre Hospitalier Cheikh Zayed (CHZ), Nouakchott, Mauritania.

Study population

The study population consisted of patients admitted to either hospital with ectopic pregnancy. A total of 40 patients fulfilled the study inclusion criteria. Patients with confirmed ectopic pregnancy during the study period were included. Women with ultrasonographically confirmed intrauterine pregnancy and patients who left the hospital before management were excluded.

Data collection

Data were prospectively collected from patient interviews and clinical follow-up records using a standardized study questionnaire. Variables included demographic characteristics, obstetric and gynecological history, risk factors, clinical presentation, laboratory investigations, ultrasonographic findings, treatment modality, complications, and clinical outcomes.

Statistical analysis

Data were entered and tabulated using Microsoft Excel 2024. Statistical analysis was performed using SPSS version 27.

Ethical considerations

Ethical approval and consent procedures were confirmed by the investigators. The exact ethics committee name, approval/reference number, and wording of the consent procedure should be inserted from the original ethics documentation before submission.

RESULTS

Forty women with ectopic pregnancy were included. Twenty-two patients (55%) were managed at CHZ and 18 (45%) at CHME. Mean maternal age was 30 years, with a range of 18-40 years.

Regarding previous history, 40% of patients had undergone previous surgery. Previous abortion was reported in 32.5%, previous ectopic pregnancy in 15%, and contraception use in 37.5%. Genital infection was frequently reported in the study population.

Pelvic pain was the predominant presenting symptom. Signs of shock were observed in 7 patients (17.5%). On physical examination, abdominal tenderness was found in 55%, vaginal examination was painful in 60%, and Douglas pouch tenderness was reported in more than half of patients. Anemia was identified in 60%.

UNDER PEER REVIEW IN IJAR

Serum β-hCG was positive in all patients. Ten women (25%) had β-hCG levels >12,000, 27 (67.5%) had levels between 1,000 and 12,000, and three (7.5%) had levels below 1,000. Hemoperitoneum was detected by ultrasound in 57.5% of cases.

Thirteen patients (32.5%) received intramuscular methotrexate at a dose of 1 mg/kg. β-hCG levels decreased in 12 patients, whereas one patient experienced treatment failure. The observed methotrexate success proportion was therefore 92.3%. Surgical management was performed in 25 patients (62.5%).

Among surgically characterized ectopic pregnancies, the ampullary location predominated (84%), followed by isthmic and ovarian locations (8% each). Left-sided ectopic pregnancies accounted for 55%. Ruptured ectopic pregnancy accounted for 80% of cases.

Clinical outcome was favorable in 85% of patients. Severe anemia requiring blood transfusion was a major complication. One maternal death was recorded (2.5%).

Table 1. Main clinical, diagnostic and therapeutic findings

Variable	n	%
CHZ	22	55.0
CHME	18	45.0
Signs of shock	7	17.5
Anemia	24	60.0
Hemoperitoneum	23	57.5
Methotrexate treatment	13	32.5
Methotrexate success	12/13	92.3
Surgical treatment	25	62.5
Ruptured ectopic pregnancy	32	80.0
Favorable outcome	34	85.0
Maternal death	1	2.5

DISCUSSION

The main finding of this prospective two-center study is the high burden of complicated ectopic pregnancy. Although most patients were young and generally in good condition at presentation, 17.5% had signs of shock and 80% had ruptured ectopic pregnancies. This pattern suggests that a substantial proportion of patients reached specialized care at an advanced stage.

The mean age of 30 years is consistent with the reproductive age distribution described in the comparative studies cited in the thesis. Previous pelvic or abdominal surgery, abortion, genital infection and previous ectopic pregnancy were identified in the study population.

Pelvic pain represented the main clinical manifestation. β-hCG measurement and ultrasonography were central to diagnosis. Transvaginal ultrasonography was not universally used, which may represent an opportunity for improving early diagnosis.

Medical treatment with methotrexate was used in 32.5% of patients. Twelve of the 13 treated patients showed a favorable β-hCG response, corresponding to an observed success proportion of 92.3%. This finding suggests that medical management can be effective in appropriately selected patients, although the small number treated limits definitive conclusions.

UNDER PEER REVIEW IN IJAR

Surgery nevertheless remained the predominant therapeutic approach, involving 25 of 40 patients. Laparotomy was overwhelmingly used among operated patients, while laparoscopy was rarely performed. The high proportion of ruptured pregnancies provides an important clinical explanation for the predominance of emergency surgery and radical treatment.

The overall outcome was favorable in 85% of patients, but severe anemia requiring transfusion remained an important complication and one maternal death occurred. These findings emphasize that ectopic pregnancy continues to carry clinically significant maternal morbidity in this setting.

The principal limitations of this study include the relatively small sample size, its descriptive design, and the absence of long-term reproductive follow-up. Assessment of subsequent fertility was limited by loss to follow-up.

CONCLUSION

Ectopic pregnancy remains an important gynecological emergency in Mauritania. In this prospective two-center study, ruptured ectopic pregnancy was frequent, and surgical management, particularly laparotomy, remained predominant. Methotrexate achieved favorable outcomes in selected patients. Earlier diagnosis through improved access to quantitative β-hCG testing and transvaginal ultrasonography could reduce the proportion of ruptured pregnancies and increase opportunities for medical treatment and minimally invasive surgery.

.

REFERENCES

1. Kitchin J, Wein R, Nley W, Thiagarajah S, Thornton W. Ectopic pregnancy: current clinical trends. Obstet Gynecol. 1979.

2. Coste J, Bouyer J, Germain E, Ughetto S, Pouly JL, Job-Spira N. Recent declining trend in ectopic pregnancy in France.

3. Fatimetou Abdelkader Hamad, Lamiri N, et al. Diagnostic and therapeutic management of ectopic pregnancies. Curr Womens Health Rev. 2022;18(4).

4. Kellie M, Madeline M, Ryan M, et al. Overview of ectopic pregnancy diagnosis, management, and innovation. Womens Health. 2023;19:1-13.

5. Monnier P, et al. La grossesse extra-utérine: aspects épidémiologiques, diagnostiques, thérapeutiques et pronostiques. J Gynecol Obstet Biol Reprod. 1988;14:67-75.

Editorial note before submission: The manuscript has been harmonized to 25 surgically treated patients (62.5%). The ethics committee name/reference number and exact consent wording remain to be inserted from the original documentation. The reference list should be verified against the source articles and completed to the journal's Vancouver style before submission.

UNDER PEER REVIEW IN IJAR