

Clinical presentation, management patterns, and short-term outcomes of ectopic pregnancy: a hospital-based descriptive observational study.

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Abstract Background

Ectopic pregnancy remains an important cause of first-trimester maternal morbidity and emergency gynecologic admission, particularly when diagnosis is delayed and tubal rupture has already occurred. Early recognition using transvaginal ultrasonography and serum beta-human chorionic gonadotropin can improve triage and expand conservative treatment options.

Objectives

To assess the clinical presentation, associated risk factors, anatomical distribution, management patterns, and treatment outcomes among women diagnosed with ectopic pregnancy.

Methods

This hospital-based descriptive observational study included 100 women with confirmed ectopic pregnancy who were managed at Government Medical College, Suryapet, Telangana, India, between December 2024 and November 2025. Demographic and obstetric characteristics, associated risk factors, clinical presentation, diagnostic findings, anatomical location, treatment modalities, and short-term maternal outcomes were assessed. Data were summarized using descriptive statistics.

Results

The mean age of the participants was 27.4 ± 4.8 years. Most women were multigravida, multiparous, from rural areas, and unbooked at presentation. Abdominal pain, amenorrhea, and vaginal bleeding were the commonest presenting features. Ampullary tubal pregnancy was the predominant site, and more than half of the women presented with ruptured ectopic pregnancy. Initial management was surgical in 74.0% of cases, while 18.0% received methotrexate and 8.0% were initially observed expectantly. Final definitive management was surgical in 78.0% of women. Blood transfusion was required in 26.0%, but no maternal deaths occurred.

Conclusion

Ectopic pregnancy in this study commonly presented after clinical deterioration, leading to a high burden of rupture and operative intervention. Prompt diagnosis, early referral, and structured management pathways were associated with favorable short-term survival.

Recommendations

Strengthening early pregnancy assessment services, improving peripheral referral systems, and ensuring timely access to ultrasonography, serum beta-hCG testing, and conservative treatment protocols can reduce rupture-related morbidity.

Keywords: ectopic pregnancy, tubal pregnancy, ectopic gestation, methotrexate, laparoscopy, maternal outcome

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Introduction

Ectopic pregnancy is defined as implantation of a fertilized ovum outside the endometrial cavity, with the fallopian tube accounting for the overwhelming majority of cases. Although the overall proportion of pregnancies affected is relatively small, the condition continues to contribute substantially to first-trimester morbidity and emergency obstetric admissions because progression of the gestation in an extrauterine site can rapidly culminate in tubal rupture, hemoperitoneum, and hemodynamic compromise [1-4]. Improvements in transvaginal ultrasonography, serum beta-human chorionic gonadotropin measurement, and early pregnancy surveillance have transformed the diagnostic landscape, allowing many women to be identified before catastrophic presentation [2,3,5]. Even so, delayed recognition persists in settings where access to early antenatal evaluation is inconsistent, referral systems are fragmented, or symptoms are initially interpreted as nonspecific pelvic pain or threatened abortion [6-8].

The epidemiology of ectopic pregnancy reflects a close interaction between reproductive behavior, tubal pathology, assisted reproduction, prior pelvic infection, and previous pelvic or tubal procedures. Population-based and meta-analytic studies have consistently identified prior ectopic pregnancy, pelvic inflammatory disease, infertility, prior tubal surgery, abortion-related history, and contraceptive failure in selected settings as important determinants of risk [4-7]. Smoking, increasing maternal age, and underlying tubal damage also contribute to susceptibility in many cohorts [4,6]. Nevertheless, a clinically relevant proportion of women present without an obvious antecedent risk factor, underscoring the need for a high index of suspicion even in apparently low-risk patients [5,7].

From a clinical perspective, ectopic pregnancy has a broad spectrum of presentation. The classical triad of amenorrhea, abdominal pain, and vaginal bleeding remains widely recognized, but individual patients can present with syncope, shoulder tip pain, adnexal tenderness, pallor, or overt shock depending on the stage of disease and extent of intra-abdominal bleeding [8-11]. Diagnostic confirmation relies on synthesis rather than any single test. Urinary pregnancy testing establishes early suspicion, whereas serial serum beta-hCG values combined with transvaginal ultrasonography help differentiate viable intrauterine pregnancy, pregnancy of

unknown location, and extrauterine implantation [2,3,8,10]. Once the diagnosis is established, management is individualized according to hemodynamic status, gestational site, sonographic findings, serum beta-hCG trends, and feasibility of follow-up. Options include expectant monitoring in carefully selected cases, medical therapy with methotrexate, and surgical treatment by laparoscopy or laparotomy [9-14].

Despite advances in management, outcomes still depend heavily on timeliness of presentation and availability of organized emergency gynecologic care. Hospital-based observational studies remain valuable because they document local patterns of presentation, delays, resource utilization, and immediate outcomes within real-world clinical practice. Such data are particularly relevant for tertiary institutions serving mixed rural and urban populations, where referral lag, limited early booking, and variable access to diagnostics can influence disease severity at arrival.

The objectives of the present study were to describe the demographic and obstetric profile of women with ectopic pregnancy, evaluate their clinical and diagnostic presentation, determine the anatomical distribution and rupture status, assess the modalities of treatment used, and analyze short-term management outcomes among women treated at Government Medical College, Suryapet, Telangana, India.

Methodology

Study design and setting

This hospital-based descriptive observational study was conducted in the Department of Obstetrics and Gynaecology at Government Medical College, Suryapet, Telangana, India, over a 12-month period from December 2024 to November 2025. The institution is a government tertiary-care referral center providing obstetric and gynecological services to patients from both rural and urban areas. The study included women diagnosed with ectopic pregnancy who received clinical evaluation and management at the institution during the specified study period. The study aimed to characterize the demographic and obstetric profiles, clinical manifestations, diagnostic findings, management approaches, and short-term treatment outcomes of women with ectopic pregnancy.

Study population

All women presenting during the study period with a diagnosis of ectopic pregnancy were screened for eligibility. A total of 100 women with confirmed ectopic pregnancy were included in the final analysis. Confirmation was based on clinical evaluation supported by urine pregnancy testing, serum beta-human chorionic gonadotropin estimation, transvaginal or transabdominal ultrasonography, and intraoperative findings wherever applicable, in accordance with standard diagnostic principles described in the literature [2,8-10]. Women were enrolled consecutively to reduce selection bias and to reflect the routine patient flow of the institution.

Inclusion and exclusion criteria

Women of reproductive age with a confirmed diagnosis of ectopic pregnancy, irrespective of gravidity, parity, or gestational age at presentation, were eligible for inclusion. Both ruptured and unruptured ectopic pregnancies, including tubal and non-tubal implantation sites, were considered. Women with pregnancy of unknown location that did not subsequently progress to a confirmed diagnosis of ectopic pregnancy and those with incomplete clinical records pertaining to diagnosis, management, or immediate treatment outcomes were excluded from the final analysis.

Data collection

A structured case record format was used for documentation. Information recorded included age, residence, booking status, gravidity, parity, gestational age at presentation, and associated risk factors such as previous abortion, pelvic inflammatory disease, infertility treatment, previous ectopic pregnancy, intrauterine contraceptive device use, prior cesarean delivery, and tubal surgery. Clinical presentation was documented in terms of abdominal pain, amenorrhea, vaginal bleeding, syncopal symptoms, examination findings, and hemodynamic status. Diagnostic details included urine pregnancy test positivity, serum beta-hCG category, ultrasonographic findings, site of ectopic pregnancy, laterality, and rupture status.

Management and outcome assessment

Management decisions were taken by the treating obstetric team based on hemodynamic stability, clinical severity, imaging findings, serum beta-hCG level, and feasibility of follow-up. Hemodynamically stable women with unruptured ectopic pregnancy and appropriate clinicoradiologic criteria were considered for expectant or medical management, while women with rupture, contraindications to methotrexate, failed conservative treatment, or clinical instability underwent surgery [9-14]. Operative details such as salpingectomy, salpingostomy, cornual resection, scar ectopic excision, ovarian wedge resection, laparotomy, and laparoscopy were recorded. Immediate outcomes assessed included need for blood transfusion, ICU admission, postoperative complications, re-intervention, duration of hospital stay, discharge status, and maternal survival.

Statistical analysis

Data were compiled in a spreadsheet and analyzed using descriptive statistical methods. Continuous variables were summarized as mean $\pm$ standard deviation, whereas categorical variables were expressed as frequency and percentage. Findings were presented in text and tables.

Ethical Considerations

Study was approved by the Institutional Ethics Committee of Government Medical College, Suryapet, Telangana, India, before initiation of the study. The study was conducted in accordance with institutional ethical standards and the principles of the Declaration of Helsinki. Patient confidentiality and privacy were strictly maintained throughout the study period.

Results

A total of 100 women with confirmed ectopic pregnancy were included in the analysis. The demographic characteristics, clinical findings, anatomical distribution, management modalities, and short-term outcomes are presented in Tables 1–4.

Table 1: Baseline demographic, obstetric, and risk-factor profile of study participants (N = 100)

Variable	Category	n	%
Age group [years]	≤ 20	12	12.0
	21–25	38	38.0

	26–30	34	34.0
	31–35	12	12.0
	>35	4	4.0
Residence	Rural	62	62.0
	Urban	38	38.0
Gravidity	Primigravida	36	36.0
	Multigravida	64	64.0
Parity	Nulliparous	42	42.0
	Multiparous	58	58.0
Booking status	Booked	44	44.0
	Unbooked	56	56.0
Gestational age at presentation	<6 weeks	18	18.0
	6–8 weeks	52	52.0
	>8 weeks	30	30.0
Risk factors*	Previous abortion	20	20.0
	Pelvic inflammatory disease	18	18.0
	Infertility treatment / ovulation induction	12	12.0
	Previous cesarean delivery	11	11.0
	Previous ectopic pregnancy	8	8.0
	IUCD use	7	7.0
	Previous tubal surgery	5	5.0
	No identifiable risk factor	29	29.0

Note. Multiple responses were possible for risk-factor assessment.

The participants were aged 19–38 years, with a mean age of 27.4 ± 4.8 years. The largest age group was 21–25 years (38.0%), followed by 26–30 years (34.0%). Most participants were multigravida (64.0%), multiparous (58.0%), rural residents (62.0%), and unbooked at admission (56.0%). Gestational age at presentation was 6–

8 weeks in 52.0% of women. Reported risk factors included previous abortion (20.0%), pelvic inflammatory disease (18.0%), infertility treatment (12.0%), and previous cesarean delivery (11.0%); 29.0% had no identifiable risk factor.

Table 2: Clinical presentation and diagnostic findings among women with ectopic pregnancy (N = 100)

Variable	n	%
Presenting symptoms and signs*		
Abdominal pain	94	94.0
Amenorrhea	90	90.0
Vaginal bleeding	62	62.0
Giddiness / syncope	16	16.0
Shoulder tip pain	6	6.0
Adnexal tenderness	86	86.0
Cervical motion tenderness	70	70.0
Pallor	34	34.0
Shock at presentation	12	12.0
Diagnostic findings		
Positive urine pregnancy test	100	100.0
Serum β -hCG <1500 mIU/mL	16	16.0
Serum β -hCG 1500–5000 mIU/mL	58	58.0

Serum β -hCG >5000 mIU/mL	26	26.0
Empty uterus on ultrasonography	92	92.0
Adnexal mass on ultrasonography	78	78.0
Free fluid on ultrasonography	58	58.0
Live extrauterine gestation	9	9.0

Note. Multiple responses were possible for symptoms and signs.

Abdominal pain was the most frequent presenting complaint (94.0%), followed by amenorrhea (90.0%) and vaginal bleeding (62.0%). Adnexal tenderness and cervical motion tenderness were observed in 86.0% and 70.0%, respectively. Pallor occurred in 34.0%, and 12.0%

presented in shock. All women had a positive urine pregnancy test. Serum β -hCG concentrations of 1500–5000 mIU/mL were recorded in 58.0%. Ultrasonography identified an empty uterus in 92.0%, an adnexal mass in 78.0%, and free fluid in 58.0%.

Table 3: Distribution of ectopic pregnancy according to site, laterality, and rupture status (N = 100)

Variable	Category	n	%
Site of ectopic pregnancy	Ampullary	58	58.0
	Isthmic	14	14.0
	Fimbrial	10	10.0
	Cesarean scar	8	8.0
	Interstitial / cornual	5	5.0
	Ovarian	3	3.0
	Cervical	2	2.0
Laterality	Right	56	56.0
	Left	44	44.0
Status at presentation	Ruptured	61	61.0
	Unruptured	39	39.0

The ampullary region was the most frequent site of ectopic pregnancy (58.0%), followed by the isthmic

involvement was recorded in 56.0% and left-sided involvement in 44.0%. At presentation, 61.0% of ectopic pregnancies were ruptured and 39.0% were unrupture

(14.0%) and fimbrial (10.0%) regions. Less common sites were cesarean scar (8.0%), interstitial/cornual (5.0%), ovarian (3.0%), and cervical (2.0%). Right-sided

Table 4: Management modalities and treatment outcomes in women with ectopic pregnancy (N = 100)

Variable	Category	n	%
Initial management	Expectant	8	8.0
	Medical [methotrexate]	18	18.0
	Surgical	74	74.0
Final treatment outcome	Expectant successful	7	7.0
	Medical successful	15	15.0
	Surgical	78	78.0
Type of surgery [n = 78]	Salpingectomy	50	64.1
	Salpingostomy	7	9.0
	Fimbrial expression / milking	5	6.4

Surgical approach [n = 78]	Cornual resection	4	5.1
	Scar ectopic excision	8	10.3
Outcome / complications	Ovarian wedge resection	2	2.6
	Other procedures	2	2.6
	Laparotomy	49	62.8
	Laparoscopy	29	37.2
	Blood transfusion required	26	26.0
	ICU admission	5	5.0
	Postoperative wound infection	4	4.0
	Re-intervention required	2	2.0
	Prolonged hospital stay [>5 days]	19	19.0
	Maternal mortality	0	0.0
	Discharged in stable condition	100	100.0

Note. Percentages for operative procedures and surgical approaches are based on the 78 women who underwent surgery; all other percentages are based on N = 100.

Initial management was surgical in 74.0%, medical with methotrexate in 18.0%, and expectant in 8.0%. Expectant management was successful in seven women, and medical treatment was successful in 15 women. Definitive surgery was required in 78.0% of the cohort. Among surgical cases, salpingectomy was the most common procedure (64.1%), and laparotomy was performed more frequently than laparoscopy (62.8% versus 37.2%). Blood transfusion was required in 26.0% of women, ICU admission in 5.0%, postoperative wound infection occurred in 4.0%, and re-intervention was necessary in 2.0%. There were no maternal deaths, and all 100 women were discharged in stable condition.

Discussion

The present hospital-based prospective observational study evaluated the demographic and obstetric characteristics, associated risk factors, clinical presentation, anatomical distribution, management approaches, and short-term outcomes of ectopic pregnancy among 100 women treated at a tertiary-care referral center. The findings highlight the predominance of ectopic pregnancy among women in their reproductive years, the substantial proportion presenting with tubal rupture, and the consequent need for surgical intervention. Interpretation of these observations in relation to the study objectives provides insight into the clinical burden and management patterns of ectopic pregnancy in this setting.

Regarding the demographic and obstetric profile, the majority of participants were aged 21–30 years, with a mean age of 27.4 ± 4.8 years. Multigravida and

multiparous women accounted for 64.0% and 58.0% of the study population, respectively (Table 1). This distribution is consistent with the reproductive-age pattern described in epidemiological studies of ectopic pregnancy [4,5]. However, the predominance of these characteristics should be interpreted as a description of the affected population rather than evidence of increased risk, as the study did not include a comparison group of women without ectopic pregnancy. Rural residents constituted 62.0% of the cohort, while 56.0% were unbooked at presentation (Table 1). These findings may reflect differences in healthcare accessibility, early pregnancy surveillance, and referral practices within the hospital's catchment population. Although delayed diagnosis may contribute to advanced clinical presentation, the present study did not directly evaluate the interval between symptom onset, initial consultation, referral, and definitive diagnosis.

Assessment of associated risk factors revealed previous abortion (20.0%), pelvic inflammatory disease (18.0%), infertility treatment or ovulation induction (12.0%), and previous cesarean delivery (11.0%) as the most frequently documented characteristics (Table 1). Previous ectopic pregnancy, intrauterine contraceptive device use, and prior tubal surgery were also reported. These observations are broadly consistent with previous epidemiological investigations identifying tubal pathology, pelvic infection, reproductive interventions, and previous ectopic pregnancy as important factors associated with ectopic implantation [4–7]. Nevertheless, the descriptive nature of the present analysis does not permit estimation of the independent contribution of individual factors to ectopic pregnancy risk. Notably, 29.0% of participants

had no identifiable risk factor (Table 1), emphasizing that the absence of a recognized predisposing condition should not diminish clinical suspicion when symptoms suggest ectopic pregnancy.

With respect to clinical presentation and diagnostic characteristics, abdominal pain was the most frequent presenting symptom (94.0%), followed by amenorrhea (90.0%) and vaginal bleeding (62.0%) (Table 2). These findings correspond to the classical clinical manifestations described in previous reviews [8,10,11]. The high frequency of abdominal pain and amenorrhea indicates their importance in the initial assessment of women presenting with suspected early pregnancy complications. However, the variable occurrence of vaginal bleeding demonstrates that the complete classical triad is not necessary for clinical suspicion. Adnexal tenderness (86.0%) and cervical motion tenderness (70.0%) were common examination findings, while pallor (34.0%), syncope or giddiness (16.0%), and shock (12.0%) indicated clinically significant compromise in a subset of patients. These findings underscore the importance of combining presenting symptoms with physical examination and timely diagnostic evaluation.

Diagnostic assessment demonstrated a positive urine pregnancy test in all participants, while serum β -hCG concentrations were most frequently within the range of 1500–5000 mIU/mL (58.0%) (Table 2). Ultrasonography identified an empty uterine cavity in 92.0%, an adnexal mass in 78.0%, and free intraperitoneal fluid in 58.0% of women. These findings illustrate the diagnostic contribution of biochemical testing and ultrasonography in confirmed ectopic pregnancy. Previous studies emphasize that serum β -hCG measurements should be interpreted alongside ultrasonographic findings and clinical assessment rather than used independently to establish the diagnosis [2,3,8]. The substantial frequency of sonographically detected free fluid is clinically relevant, particularly in the context of the high proportion of ruptured ectopic pregnancies observed in this cohort. However, the study did not assess the association between individual ultrasonographic findings and rupture status.

Evaluation of anatomical distribution showed that ampullary implantation was the predominant site (58.0%), followed by isthmic (14.0%) and fimbrial (10.0%) locations (Table 3). This pattern agrees with the established predominance of tubal implantation, particularly within the ampullary segment, reported in the literature [8,11]. Less common implantation sites

included cesarean scar (8.0%), interstitial or cornual (5.0%), ovarian (3.0%), and cervical (2.0%) pregnancies. The presence of these less frequent forms highlights the anatomical diversity of ectopic pregnancy and the importance of accurately identifying implantation sites when planning management. Right-sided involvement was slightly more frequent than left-sided involvement (56.0% versus 44.0%). However, the clinical significance of this difference cannot be established from the present descriptive analysis.

A particularly important finding was that 61.0% of women presented with ruptured ectopic pregnancy, whereas 39.0% had unruptured ectopic pregnancy (Table 3). The high proportion of rupture indicates a substantial burden of advanced clinical presentation in this tertiary-care cohort. Possible contributing explanations include delayed recognition of early pregnancy symptoms, barriers to diagnostic evaluation, and referral of more severe cases to the tertiary institution. These explanations remain hypothetical because the study did not directly measure diagnostic delays or examine associations between referral characteristics and rupture. The observed rupture frequency nevertheless reinforces the clinical importance of early evaluation and timely access to emergency obstetric and gynecological services.

Regarding management patterns, 74.0% of participants underwent surgical treatment initially, while 18.0% received methotrexate and 8.0% were managed expectantly (Table 4). Following treatment and observation, definitive surgical management was required in 78.0% of the cohort. The predominance of surgery is clinically consistent with the high frequency of ruptured ectopic pregnancy and the need for timely intervention in patients with significant clinical compromise. Existing evidence supports individualized management according to hemodynamic status, clinical findings, implantation characteristics, serum β -hCG concentrations, and suitability for follow-up [9,12–14]. However, the present study did not conduct a patient-level analysis to determine which specific factors influenced individual treatment decisions.

Among the women initially managed conservatively, expectant management was successful in 7 of 8 cases (87.5%), while methotrexate treatment was successful in 15 of 18 cases (83.3%) (Table 4). These findings demonstrate that non-surgical management was feasible in selected patients within this clinical setting. Nevertheless, the relatively small numbers and

nonrandomized treatment allocation limit comparisons between the two approaches. Treatment success should therefore be interpreted within the context of patient selection rather than as evidence of comparative effectiveness.

clarify opportunities for improving ectopic pregnancy care.

Conclusion

Salpingectomy accounted for 64.1% of surgical procedures, and laparotomy was performed more frequently than laparoscopy (62.8% versus 37.2%) (Table 4). The predominance of salpingectomy may be related to the substantial proportion of ruptured tubal pregnancies, although the study did not examine the relationship between rupture status and the specific operative procedure. Similarly, the greater use of laparotomy may reflect the need for emergency intervention or institutional practice patterns, but the reasons for selecting a particular surgical approach were not systematically evaluated.

Ectopic pregnancy in the present study was predominantly encountered in women aged 21–30 years and commonly presented with abdominal pain, amenorrhea, and vaginal bleeding. Ampullary tubal implantation was the most frequent site, and a substantial proportion of women arrived after rupture, resulting in a high requirement for operative management and blood transfusion. Expectant and medical treatment were effective in selected unruptured cases, but surgery remained the definitive modality for most patients. Despite the morbidity associated with delayed presentation, short-term outcomes were favorable, with no maternal deaths and universal discharge in stable condition. These findings reinforce the importance of early suspicion, prompt diagnosis, timely referral, and protocol-based treatment for improving maternal outcomes in ectopic pregnancy.

Limitations

Assessment of short-term maternal outcomes showed that blood transfusion was required in 26.0% of women, while 5.0% required intensive care admission (Table 4). Postoperative wound infection and re-intervention were documented in 4.0% and 2.0%, respectively, and 19.0% experienced hospital stays exceeding five days. These outcomes demonstrate that ectopic pregnancy was associated with substantial acute morbidity and healthcare resource utilization in the study population. Despite these complications, no maternal deaths occurred, and all participants were discharged in stable condition. These findings indicate favorable immediate survival outcomes within the observed cohort, although they cannot independently establish the effectiveness of a particular institutional management protocol.

This single-center hospital-based study had a modest sample size and only short-term follow-up. The analysis focused on immediate clinical outcomes and did not assess subsequent fertility, recurrence, or long-term psychosocial consequences. Referral bias was present because severe cases were more likely to reach a tertiary-care institution than women with milder early presentations. Laboratory and imaging findings were analyzed descriptively without multivariable adjustment.

Recommendations

Overall, the findings address the principal study objectives by demonstrating the demographic and clinical characteristics of affected women, identifying commonly documented associated risk factors, characterizing the anatomical distribution and rupture status, and describing management practices and immediate maternal outcomes. The predominance of ruptured ectopic pregnancy and surgical treatment underscores the importance of improving early pregnancy assessment and strengthening referral pathways. However, the single-center design, absence of a comparison group, and descriptive statistical approach restrict causal interpretation and broader generalizability. The results are most applicable to tertiary-care institutions with similar patient populations and referral patterns. Further multicenter studies incorporating referral timelines, determinants of rupture, and longer-term reproductive outcomes would help

Early pregnancy assessment pathways should be strengthened at peripheral and tertiary levels to support prompt diagnosis of ectopic pregnancy before rupture. Routine access to urine pregnancy testing, serum beta-hCG estimation, and transvaginal ultrasonography should be ensured in emergency gynecologic care. Women with established risk factors require targeted counselling and earlier review in the first trimester. Standardized protocols for selection of expectant, medical, and surgical treatment should be implemented uniformly. Referral systems between primary, secondary, and tertiary centers should be streamlined to reduce delay, blood loss, and emergency laparotomy. Periodic clinical audit of ectopic pregnancy cases can further improve quality of care and maternal safety.

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Abbreviations

β-hCG: Beta-human chorionic gonadotropin

ICU: Intensive care unit

IUCD: Intrauterine contraceptive device

Conflict of Interest

The authors declare no conflict of interest.

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The study had no funding.

Author contributions:

Dr Talari Kranthi contributed to the conception and design of the study, patient recruitment, data collection, literature review, and preparation of the initial manuscript draft. **Dr Daram Mounika** participated in clinical data acquisition, data verification, interpretation of the findings, and critical revision of the manuscript. **Dr D. Adi Lakshmi** supervised the study, contributed to the methodology, data interpretation, manuscript editing.

Data availability

Data available on request

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