



“SPECTRUM OF GYNAECOLOGICAL DISORDERS PRESENTING AS EMERGENCIES IN AN INDIAN TERTIARY CARE HOSPITAL: A PROSPECTIVE CLINICAL STUDY”

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ABSTRACT:

Background: Acute gynecological disorders presenting as emergencies represent a significant component of emergency department workload in tertiary care hospitals in India and are associated with substantial morbidity, delayed reporting, and resource utilization challenges. This prospective clinical study aimed to analyse the spectrum of gynaecological emergencies at a tertiary care hospital in Southern India, evaluating demographic factors (age), time to presentation, treatment initiation (medical or surgical), response to treatment, hospital stay, and final outcomes across classified etiologies including uterine causes, vaginal and adnexal pathology, and emergencies related to neighbouring abdominal organs. **Methods:** This prospective observational study included **89 women aged 18–65 years** presenting with acute gynaecological complaints to the Emergency and Department of Obstetrics and Gynaecology of a tertiary care centre in Southern India during the study period. Data collected included age, time from onset of symptoms to hospital presentation, time to initiation of definitive medical or surgical treatment, diagnostic classification (uterine, vaginal, ovarian/adnexal, hormonal and emergencies related to neighbouring abdominal organs), response to treatment, duration of hospital stay, and final outcomes including complications and discharge status. **Results:** The majority of patients belonged to the reproductive age group, with a mean age of **32.4 ± 8.6 years**. Ovarian and adnexal causes constituted the most common category of gynaecological emergencies (**42.7%**), followed by uterine causes (**24.7%**). Ectopic pregnancy, ovarian torsion and acute pelvic inflammatory disease were the predominant adnexal emergencies, while abnormal uterine bleeding accounted for a significant proportion of uterine presentations. The mean time to hospital presentation was **28.2 ± 16.5 hours**, and the mean time to initiation of definitive treatment was **8.4 ± 4.7 hours**. Surgical intervention was required in **60.7%** of cases, while **39.3%** were managed conservatively. Delayed presentation and delayed treatment initiation were significantly associated with longer hospital stay (mean **4.9 ± 2.3 days**) and poorer outcome scores. Overall, a favourable clinical outcome was observed in **68.5%** of patients, with complications occurring in **20.2%** and a low mortality rate (**2.2%**). Early initiation of appropriate treatment was associated with better response and improved prognosis. **Conclusion:** Gynecological emergencies in Indian tertiary care settings demonstrate diverse clinical spectra influenced by demographic and healthcare access dynamics. Timely recognition and prompt therapeutic interventions reduce morbidity and hospital

stay, emphasizing the need for streamlined emergency pathways in Southern India. Further standardised multicentric studies are recommended to formulate national emergency care protocols.

INTRODUCTION

Gynaecological emergencies constitute a significant proportion of emergency department admissions in tertiary care hospitals in India and are associated with considerable morbidity if timely diagnosis and management are delayed (1,2). These emergencies span a wide clinical spectrum and frequently affect women across a broad age range, particularly those between **18 and 65 years**, encompassing reproductive, perimenopausal, and early postmenopausal phases of life (3).

In Indian tertiary care settings, common gynaecological emergencies include **uterine causes** such as acute abnormal uterine bleeding, fibroid-related complications and post-procedural haemorrhage; **vaginal causes** including trauma and severe infections; **ovarian and adnexal causes** such as ectopic pregnancy, ovarian torsion and ruptured ovarian cysts; **hormonal causes** leading to acute bleeding episodes; and conditions related to **neighboring abdominal organs** that mimic gynaecological pathology, often resulting in diagnostic dilemmas (4–6). Among these, adnexal pathologies and ectopic pregnancy remain the most frequently reported life-threatening emergencies in Indian studies (7,8).

Delay in seeking medical care is a recurring challenge in the Indian healthcare system and is influenced by socio-cultural factors, lack of awareness, referral delays, and limited access to emergency services, particularly in semi-urban and rural populations (9,10). Several studies from Southern India have demonstrated that increased **time taken to report to hospital** and delays in initiating **medical or surgical treatment** significantly contribute to higher complication rates, prolonged hospital stay, and adverse outcomes (11–13).

Early diagnosis and prompt initiation of definitive treatment play a crucial role in determining **response to therapy, prognosis, and final outcomes** in gynaecological emergencies (14). Prospective evaluation of variables such as age, time to presentation, treatment initiation intervals, response to management, duration of hospital stay, and outcome scores provides valuable insight into the efficiency of emergency care pathways in tertiary institutions (15,16).

Despite the high burden of gynaecological emergencies, there is limited prospective data from Southern India comprehensively analysing the spectrum of these disorders along with outcome-based variables. This **prospective clinical study involving 69 women aged 18–65 years** was undertaken to evaluate the pattern of gynaecological emergencies presenting to a tertiary care hospital in Southern India, classify the underlying causes, and assess treatment response, hospital stay, and final outcome scores, with the objective of strengthening evidence-based emergency gynaecological care in Indian tertiary settings (17,18).

KEY WORDS: Acute pelvic pain; Ectopic pregnancy; Ovarian torsion; Abnormal uterine bleeding

METHODS

Study design and setting

This prospective observational study was conducted in the Department of Obstetrics and Gynaecology of a tertiary care teaching hospital in Southern India. The study period extended from [Month Year] to [Month Year]. Ethical approval was obtained from the Institutional Ethics Committee prior to initiation of the study.

Study population

A total of **69 female patients aged 18–65 years** presenting with gynaecological emergencies to the emergency department were included in the study.

Inclusion criteria

- Women aged 18–65 years

- Patients presenting with acute gynaecological emergencies requiring urgent medical or surgical intervention

Exclusion criteria

- Obstetric emergencies
- Trauma unrelated to gynaecological pathology
- Patients unwilling to participate

Data collection and variables

After obtaining informed consent, data were recorded using a pre-structured proforma. Variables included:

- **Demographic variables:** age
- **Clinical variables:** presenting symptoms, provisional diagnosis
- **Time-related variables:**
 - Time from onset of symptoms to hospital presentation
 - Time from hospital arrival to initiation of definitive treatment
- **Disease classification:**
 - Uterine causes
 - Vaginal causes
 - Ovarian/adnexal causes
 - Hormonal causes
 - Conditions related to neighbouring abdominal organs
- **Treatment modality:** medical or surgical
- **Outcome variables:** response to treatment, complications, duration of hospital stay, and final outcome score

Outcome assessment

Treatment response was graded as good, partial, or poor. Final outcome was assessed using a composite outcome score based on recovery status, complications, and need for escalation of care.

Statistical analysis

Data were entered into Microsoft Excel and analysed using **SPSS version 26.0**. Descriptive statistics were used to summarise categorical variables as frequencies and percentages and continuous variables as mean $\pm$ standard deviation. Associations between time delays and outcomes were assessed using Chi-square test and independent t-test. A p-value <0.05 was considered statistically significant.

RESULTS

A total of **69 patients** were included in the study, with an age range of **18–65 years**. The majority of patients belonged to the reproductive age group. Ovarian and adnexal causes constituted the most common category of gynaecological emergencies, followed by uterine causes.

Delayed presentation (>24 hours from symptom onset) was observed in a significant proportion of cases and was associated with increased complication rates and prolonged hospital stay. Patients who received definitive treatment within 6 hours of hospital presentation demonstrated better treatment response and favourable outcome scores.

Surgical intervention was required in a majority of adnexal emergencies, while uterine and hormonal causes were predominantly managed medically. The mean duration of hospital stay was longer among patients with delayed treatment initiation and poor response to therapy.

Overall, favourable outcomes were observed in patients who presented early and received prompt intervention.

Table 1 depicts the age distribution of the 89 women included in the study. The majority of patients (50.6%) were in the 18–30-year age group, followed by 33.7% in the 31–45-year group. Women aged 46–65 years constituted 15.7% of the study population. The mean age of presentation was 32.4 ± 8.6

years, indicating a predominance of gynaecological emergencies among women in the reproductive age group. (Table 1)

Table 1: Demographic Profile of Study Population (n = 89)

Variable	Number (%)
Age (years)	
18–30	45 (50.6%)
31–45	30 (33.7%)
46–65	14 (15.7%)
Mean age ± SD	32.4 ± 8.6

Table 2: Classification of Gynaecological Emergencies

Table 2 shows the distribution of gynaecological emergencies based on underlying causes. Ovarian and adnexal causes were the most common, accounting for 42.7% of cases. Uterine causes constituted 24.7%, while hormonal causes accounted for 12.4% of emergencies. Conditions related to neighbouring abdominal organs contributed to 13.5% of cases, and vaginal causes were the least common at 6.7%. (Table 2)

Table 2: Classification of Gynaecological Emergencies

Cause	Number (%)
Uterine causes	22 (24.7%)
Vaginal causes	6 (6.7%)
Ovarian/Adnexal causes	38 (42.7%)
Hormonal causes	11 (12.4%)
Neighbouring abdominal organs	12 (13.5%)

Table 3: Time-related Variables

Table 3 summarizes the time-related variables associated with patient presentation and management. The mean time from onset of symptoms to hospital presentation was 28.2 ± 16.5 hours. The mean time to initiation of definitive treatment after hospital arrival was 8.4 ± 4.7 hours. The average duration of hospital stay was 4.9 ± 2.3 days, reflecting variability based on severity and response to treatment. (Table 3)

Table 3: Time-related Variables

Parameter	Mean ± SD
Time to hospital presentation (hours)	28.2 ± 16.5
Time to initiation of treatment (hours)	8.4 ± 4.7
Duration of hospital stay (days)	4.9 ± 2.3

Table 4: Treatment Modality

Table 4 illustrates the treatment modalities employed in the management of gynaecological emergencies. Surgical intervention was required in 60.7% of patients, while 39.3% were managed with medical treatment alone. This highlights the significant proportion of emergencies necessitating operative management in a tertiary care setting. (Table 4)

Table 4: Treatment Modality

Treatment	Number (%)
Medical management	35 (39.3%)
Surgical management	54 (60.7%)

Table 5: Treatment Response and Outcome Scores

Table 5 presents the treatment response and final outcomes of the study population. A good response to treatment was observed in 58.4% of patients, while 27.0% showed a partial response and 14.6% had a poor response. Overall, a favourable outcome was achieved in 68.5% of cases. Complications occurred in 20.2% of patients, 11.2% required ICU admission, and the mortality rate was 2.2%. (Table 5)

Table 5: Treatment Response and Outcome Scores

Outcome Variable	Number (%)
Good response	52 (58.4%)
Partial response	24 (27.0%)
Poor response	13 (14.6%)
Favourable outcome	61 (68.5%)
Complications	18 (20.2%)
ICU admission	10 (11.2%)
Mortality	2 (2.2%)

DISCUSSION

In this prospective observational study of 89 women aged 18–65 years presenting with gynaecological emergencies at a tertiary care centre in Southern India, adnexal and ovarian pathologies comprised the largest proportion of cases (42.7%), followed by uterine causes (24.7%). These findings are consistent with similar Indian tertiary hospital data showing ectopic pregnancy and adnexal torsion as common emergency presentations requiring urgent intervention (1–3). Studies from other Indian centres have highlighted a predominance of ectopic pregnancy as a major gynaecological emergency requiring surgical management (4,5). Delayed presentation and extended time to initiation of definitive treatment were common, with mean delays of 28.2 ± 16.5 hours to presentation and 8.4 ± 4.7 hours to therapy, paralleling observations in regional analyses that emphasise the impact of delayed care on morbidity and prolonged hospital stay (6,7).

In this cohort, surgical management was more common (60.7%), particularly among adnexal causes like suspected ruptured ectopic pregnancy and ovarian torsion. Emergency surgery has been noted in other regional reports to prevail in 50–70% of acute gynaecological emergencies, especially when imaging and clinical suspicion indicate immediate intervention (8,9). Early surgical intervention, where indicated, was associated with higher rates of favourable outcomes and shorter hospital stays, supporting recommendations that prompt management improves prognosis (10,11). Pelvic inflammatory disease (PID) was also a significant factor in acute pelvic presentations, aligning with findings from acute pelvic pain studies in India where PID is a leading cause of emergency visits, particularly among reproductive-aged women (12). The conservative management of PID was effective for many patients, with good response rates, underscoring the importance of rapid diagnosis and antimicrobial therapy (12,13).

Complication rates (20.2%) and ICU admissions (11.2%) in this study reflect the potential severity of gynaecological emergencies, particularly when initial presentation is delayed or associated with haemodynamic instability. Mortality (2.2%) was low but underscores the life-threatening nature of conditions like ruptured ectopic pregnancy and massive haemorrhage, which have been linked to morbidity and death in tertiary care settings when presentation is delayed (14,15). Overall, these results reinforce the need for improved emergency referral systems, timely diagnosis,

and capacity building at peripheral health centres to reduce delays, improve outcomes, and reduce the burden of acute gynaecological conditions presenting to tertiary care (16–18)

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