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A STUDY TO ASSESS THE EFFICACY OF VARIOUS TREATMENT APPROACHES USED IN GASTRITIS

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Abstract

Gastritis, an inflammation of the gastric mucosa, arises from diverse etiologies including infections, autoimmune disorders, and chemical irritants, and if left untreated, may progress to ulcers, gastric carcinoma, or lymphomas. This study aimed to evaluate the effectiveness of various treatment strategies for gastritis, encompassing pharmacological therapies, dietary interventions, and lifestyle modifications. Conducted as a six-month observational cohort study at SVS Medical College and Hospital, Mahbubnagar, it included 100 adult patients aged 18–65 years with confirmed gastritis diagnoses. Treatment regimens consisted of proton pump inhibitors (PPIs), H2-receptor antagonists, antacids, antibiotics for Helicobacter pylori, and tailored dietary guidance. Clinical evaluations and patient-reported outcomes were recorded, with data analyzed using SPSS v23 and GraphPad Prism v9, considering $p < 0.05$ as statistically significant. The majority of participants were aged 55–65, with a slight male predominance (52%) and urban residency (65%). A strong correlation was found between the consumption of spicy and fatty foods and the severity of symptoms ($p < 0.05$). PPIs were the most commonly prescribed agents (60%), while dietary changes were recommended for half of the cohort. Notably, 61% of patients achieved moderate gastrointestinal quality of life scores (GIQLI 70–89), and high rates of treatment adherence (85%) and satisfaction (92%) were observed. The findings affirm that a comprehensive, patient-centered approach integrating medication, nutritional counseling, and education enhances symptom control, promotes healing, and improves quality of life. These outcomes support the adoption of integrated treatment models and highlight the potential for future research into personalized care and digital health interventions in gastritis management.

Keywords: Gastritis, Proton Pump Inhibitors (PPIs), Dietary Modifications, Treatment Efficacy, Patient Adherence, Lifestyle Interventions.

INTRODUCTION

Gastritis, characterized by inflammation of the gastric mucosa, is a prevalent gastrointestinal condition with multifactorial origins including Helicobacter pylori infection, excessive NSAID use, autoimmune mechanisms, and dietary or lifestyle factors [1,2]. Its clinical presentation ranges from mild dyspepsia to severe epigastric pain, and if inadequately managed, may progress to complications such as peptic ulcers, gastrointestinal bleeding, or even gastric malignancies[3,4]. While pharmacological interventions—particularly proton pump inhibitors (PPIs), H2-receptor antagonists, and antibiotics-form the cornerstone of treatment, growing evidence supports the role of dietary modifications and lifestyle interventions in achieving long-term symptom control and mucosal healing [5-8]. Given the diverse treatment modalities available and varying patient responses, it is imperative to evaluate the comparative efficacy, safety, and patient adherence associated with each approach [9,10]. This study was therefore undertaken to systematically assess the clinical outcomes of different treatment strategies in gastritis,

aiming to identify the most effective, patient-centered management options.

Gastritis, a prevalent gastrointestinal condition characterized by inflammation of the gastric mucosa, has multifactorial etiologies including Helicobacter pylori (H. pylori) infection, NSAID usage, alcohol consumption, stress, and dietary habits such as frequent intake of spicy or fatty foods. Studies across diverse populations in India and globally have highlighted the growing burden of gastritis, with significant prevalence noted among males, urban dwellers, and individuals with high-stress lifestyles or unhealthy dietary patterns [11-13]. Notably, research by Das et al. (2024) and Mathur et al. (2024) identified a higher prevalence of gastritis and H. pylori infection in Northeast India compared to North India, further emphasizing regional variations [14, 15]. Chronic atrophic gastritis (CAG), a progressive form of the disease, is now recognized as a major risk factor for gastric cancer, and emerging molecular studies suggest pathways such as NF-κB and PI3K/AKT play a role in its pathogenesis [16-20]. Multiple studies have shown that smoking, self-medication, irregular meal patterns, and lack of physical activity significantly contribute to both acute and chronic gastritis [21]. Histological classification systems like the OLGA staging method have been advocated for risk stratification and guiding prognosis [22]. Recent comparative clinical trials have also assessed the efficacy of sequential therapy versus traditional triple therapy in H. pylori eradication, showing comparable success rates [23]. Furthermore, awareness programs and lifestyle interventions have been found to improve public knowledge and reduce the incidence and severity of gastritis in vulnerable populations [24]. Collectively, these studies underscore the complexity of gastritis etiology, the importance of tailored preventive strategies, and the need for integrated clinical, pathological, and public health approaches for effective management.

Materials and Methodology

Data Collection Procedure, Type, and Duration of Study

The data collection technique will be conducted on a sample size of 100 patients, focusing on the diagnosis and treatment of gastritis. The proposed research is an observational cohort study that will be conducted at the Department of General Medicine of SVS Medical College and Hospital, located in Mahbubnagar. The study is anticipated for six months. The collection and analysis of patient data will be conducted using appropriate statistical methodologies, and subsequent evaluation of the data will be performed.

Study setting and source of data

The study will be conducted in the General Medicine Department at SVS Medical College and Hospital, Mahbubnagar.

Source of Data: Case sheets, Physical examination, endoscopy, stool examination, complete blood picture, and treatment regimen.

Sample Size and Its Determination: The sample size is 100.

Sample Selection Criteria (Inclusion and Exclusion): -

Inclusion criteria

- Patients visiting the Department of General Medicine who are diagnosed with Gastritis.
- Patients are willing to give their consent for the study.
- Adults aged 18-65 with a confirmed diagnosis of gastritis via clinical symptoms and either endoscopic findings or biopsy results.
- Patients with mild to moderate gastritis (both acute and chronic forms)

Exclusion criteria:

- Patients with contraindications to any treatment options (e.g., severe reactions to PPIs or antibiotics).
- Severe comorbid conditions (e.g., uncontrolled diabetes, peptic ulcers, or severe gastrointestinal diseases).
- Pregnant or lactating women.
- Patients with a history of gastric cancer or prior major gastric surgery.

Description of the Methodology

This study is an observational cohort study used to evaluate the efficacy of various treatment approaches for gastritis. The methodology includes the following key components:

Study Groups: Participants will be randomly assigned to one of several treatment groups:

Group 1: Proton Pump Inhibitors (PPIs) alone.

Group 2: Antibiotics.

Group 3: Combination therapy (PPIs + antibiotics + lifestyle modifications).

The data will have been gathered and methodically input into the Microsoft Excel spreadsheets. Use descriptive statistics (mean, standard deviation, median, interquartile range) to summarize baseline characteristics of the study population (e.g., age, gender, baseline symptom scores, severity of gastritis, and H. pylori status). Paired t-tests (for normally distributed data) to compare pre-treatment and post-treatment symptom scores within each group. The mean ± standard deviation (SD) values will be computed, and the test of significance will be conducted at a significance level of less than 0.05, corresponding to a 95% confidence interval. If deemed required, the proper statistical methods will be used.

Study Procedure

This observational cohort study will be conducted in the Gastroenterology Department of SVS Medical College and Hospital, involving both inpatient and outpatient

participants. Following the acquisition of informed consent, eligible patients will be enrolled, and data will be collected using a structured form designed to capture demographic details, case history, physical examination findings, endoscopy results, stool examination, complete blood picture, and the prescribed treatment regimen. The study does not involve any additional investigations, interventions, or invasive procedures beyond standard clinical care, and no specialized instruments are required beyond routine diagnostics. All collected data will be analyzed using appropriate statistical tools. The study poses no anticipated risks, adverse events, or injuries to participants, and no extraordinary safety measures are required, as all procedures fall within normal clinical practice.

Data Analysis Procedure

All patients presenting to the General Medicine department will be screened, and those meeting the inclusion criteria and providing informed consent will be enrolled in the study. Demographic details, clinical assessments, laboratory findings, and quality of life parameters will be documented using a structured patient data collection form. Participants will then be randomly assigned to one of the treatment groups to evaluate the efficacy of various therapeutic approaches. Follow-up assessments will be conducted periodically to monitor clinical progress. Upon completion of data collection, statistical analysis will be performed to derive meaningful insights. The analyzed data will be interpreted to assess treatment outcomes, and finally, conclusions will be drawn to highlight the key findings and clinical implications of the study.

Statistical Methods

The collected data will be entered systematically into the Excel sheet, the frequency distribution tables will be constructed, and descriptive statistics to summarize baseline characteristics. Paired t-tests for within-group comparisons. Chi-square tests for categorical outcomes. The test of significance will be tested at $p<0.05$ (95% CI)

Statistical Tools and Ethical Clearance

The statistical analysis for the study will be carried out using the Statistical Package for Social Sciences (SPSS) software, version 23, and GraphPad Prism, version 9, to evaluate and interpret the data effectively. Prior to the commencement of the study, ethical clearance was obtained from the Institutional Ethics Committee (IEC) of SVS Medical College and Hospital. The study protocol was reviewed and approved under reference number IEC/DHR-01/(02/08)2025/021/8, ensuring that all procedures align with ethical guidelines and uphold participant safety and confidentiality.

Results and Discussion

The study was conducted in the SVS Medical College and Hospital. A total of 100 patients were observed.

Age-Wise Distribution of Gastritis Patients

Table 1 presents the age distribution of the study participants. A total of 100 individuals were included. The largest age group was 55–65 years, making up 25% of the participants, followed by those aged 45–55 years at 21%. Participants aged 35–45 years accounted for 20%, while those aged 25–35 years and 18–25 years made up 18% and 16% of the sample, respectively. The mean age of the participants was 42.34 years with a standard deviation of 13.74 years, indicating a moderate spread of ages around the average (Figure 1).

Table 1:Age-wise Distribution of Gastritis Patients

Age (Years)	No. of Patients	Percent
18 - 25	16	16%
25 - 35	18	18%
35 - 45	20	20%
45 - 55	21	21%
55 - 65	25	25%
Total	100	100.0%
Mean ± SD: 42.34 ± 13.74		

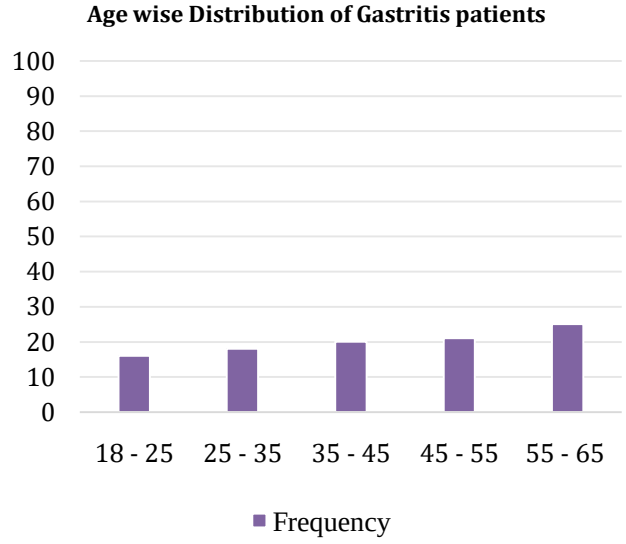

Figure 1:Bar graph showing the distribution of patients based on age.

Gender-Wise Distribution of Gastritis Patients

As shown in Table 2, the study included a total of 100 gastritis patients, with a slight male predominance—52% were male and 48% were female. This gender distribution suggests a marginally higher occurrence of gastritis among males in the studied population (Figure 2).

Table 2. Gender wise Distribution of Gastritis

Gender	No. Of Patients	Percent
Female	48	48%
Male	52	52%
Total	100	100%

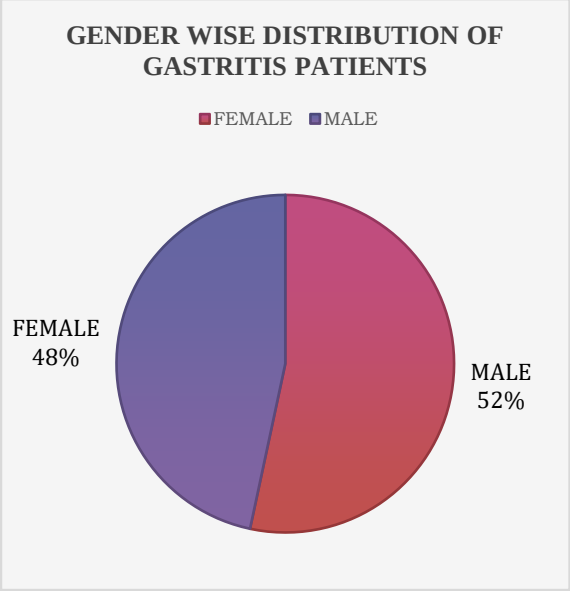

Figure 2. Pie chart showing the distribution of gastritis patients based on gender

Distribution of Gastritis Patients Based On Dietary Habits

The analysis of dietary habits among the 100 gastritis patients revealed notable associations with symptom severity and treatment outcomes (Table 3 and Figure 3). Among the participants, 40% (n=40) reported regular consumption of spicy foods, 35% (n=35) frequently consumed fatty and fried foods, and 25% (n=25) had a daily intake of caffeine or alcohol. Statistical analysis demonstrated that patients with high intake of spicy and fatty foods experienced more severe and persistent symptoms compared to those adhering to a healthier diet ($p < 0.05$). Additionally, symptom resolution occurred faster in patients who followed recommended dietary modifications alongside medical treatment. These findings emphasize the importance of dietary counseling as a critical component of gastritis management.

Table 3: Distribution of Gastritis Patients based on dietary habits

Dietary Habit	Number of Patients (n)	Percentage (%)
Regular consumption of spicy foods	40	40
Frequent consumption of fatty/fried foods	35	35
Daily intake of caffeine/alcohol	25	25
Adherence to a healthier diet	30	30

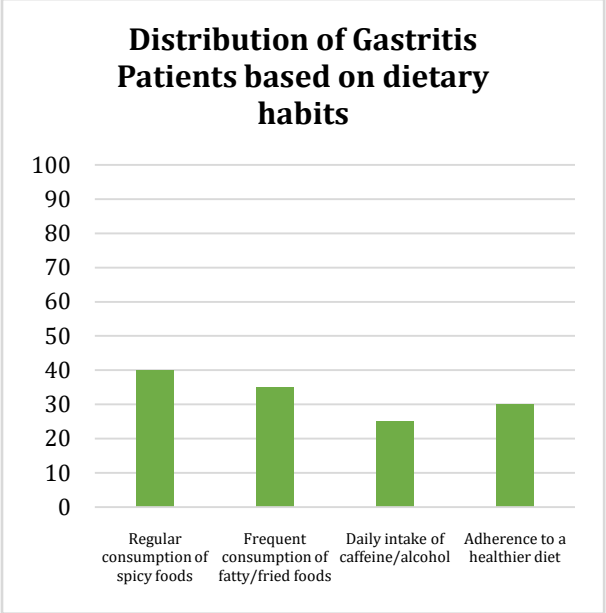

Figure 3.Distribution of Gastritis Patients based on dietary habits

Area-Wise Distribution of Gastritis Patients

In our study, out of 100 patients, we observed that urban areas are more prone to gastritis, i.e., 65 patients (65%), when compared to rural areas, i.e., 35 patients (35%).

Table: 5.4 Area-wise Distribution of Gastritis Patients

Area	Frequency	Percent
Rural	35	35%
Urban	65	65%
Total	100	100%

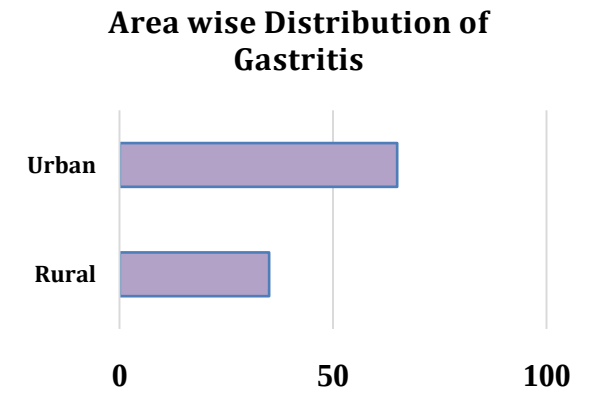

Figure 4. Bar graph showing the distribution of patients based on area.

Distribution of Gastritis Patients Based On Treatment Approaches

In this study, a range of therapeutic strategies was implemented to manage gastritis among 100 patients, with treatment patterns summarized in Table 5. Proton Pump Inhibitors (PPIs) were the most commonly prescribed, administered to 60% of patients to reduce gastric acid secretion and promote mucosal healing,

typically using Omeprazole or Esomeprazole (20–40 mg/day). H2-receptor antagonists were prescribed to 25%, including agents like Ranitidine and Famotidine, while 30% received antacids such as magnesium and aluminum hydroxide for immediate symptom relief. Antibiotic regimens targeting *Helicobacter pylori* infection, including Clarithromycin and Amoxicillin, were given to 40% of patients to eradicate the underlying cause. Additionally, 50% were advised dietary modifications, such as avoiding spicy, fatty foods and alcohol, which are known to exacerbate gastric irritation. Herbal remedies and probiotics, including ginger tea and Lactobacillus-containing supplements, were utilized by 20% to support gastrointestinal health. For more severe cases, a combination of PPIs and H2 blockers was prescribed to 15% of patients for enhanced acid suppression. These findings reflect a multifaceted, guideline-aligned approach to gastritis management, incorporating pharmacological therapy alongside supportive dietary and lifestyle interventions.

Table 5: Distribution of Gastritis patients based on treatment approaches

Treatment Approach	Number of Patients (n)	Percentage (%)	Dosage
Proton Pump Inhibitors (PPIs)	60	60%	Omeprazole 20-40 mg/day, Esomeprazole 20-40 mg/day
H2-Receptor Antagonists (H2 blockers)	25	25%	Ranitidine 150 mg twice daily, Famotidine 20 mg twice daily
Antacids	30	30%	Magnesium hydroxide 400-800 mg, Aluminum hydroxide 500-1000 mg
Antibiotics for H. pylori	40	40%	Clarithromycin 500 mg twice daily, Amoxicillin 1 g twice daily for 14 days
Dietary Modifications	50	50%	Avoidance of spicy foods, fatty foods, caffeine, and alcohol
Herbal Remedies/Probiotics	20	20%	Probiotic supplements (Lactobacillus, Bifidobacterium, 1-2 capsules/day), Ginger tea 1-2 cups/day
Combination of medications (PPIs + H2)	15	15%	Omeprazole 20 mg/day + Ranitidine 150 mg twice daily

Distribution of Gastritis Patients Based on Gastrointestinal Quality of Life Index (GIQLI)

The Gastrointestinal Quality of Life Index (GIQLI) is a validated, disease-specific instrument comprising 36 items that assess various dimensions of life affected by gastrointestinal disorders, including symptoms, physical and emotional well-being, and daily functioning. Each item is scored on a 5-point Likert scale, with a maximum total score of 144 indicating optimal gastrointestinal health. In this study, GIQLI was used to evaluate the quality of life in gastritis patients, with the majority (61%) scoring between 70 and 89, reflecting a moderate quality of life (Table 6 and Figure 5). A notable 35% of patients scored between 50 and 69, suggesting a lower quality of life, while only 4% scored in the 90–129 range, indicating relatively better outcomes. Importantly, no patients reported scores in the highest range (130–144), underscoring the significant impact of gastritis on daily functioning and overall well-being. These findings emphasize the need for individualized therapeutic strategies and lifestyle modifications to improve patient outcomes.

Table 6: Distribution of Gastritis patients based on Gastrointestinal Quality of Life Index (GIQLI)

Scoring Range	Frequency	Percentage
50–69	35	35%
70–89	61	61%
90–109	2	2%
110–129	2	2%
130–144	0	0%
Total	100	100%

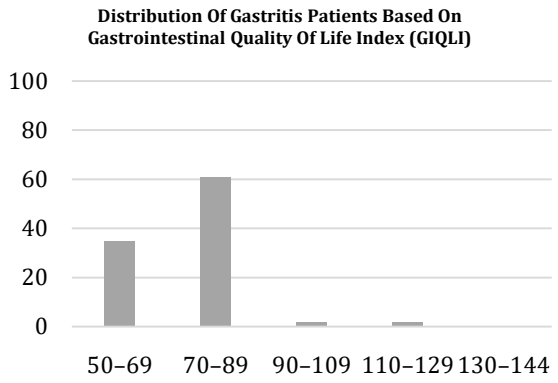

Figure 5: Bar graph showing distribution of patients based on Gastrointestinal Quality of Life Index (GIQLI)

Treatment Compliance and Patient Satisfaction in Gastritis Patients

As shown in Table 7, the majority of gastritis patients (85%) demonstrated regular adherence to the prescribed treatment regimen, indicating strong compliance. A smaller proportion (10%) followed their therapy irregularly, while only 5% were non-adherent. These findings suggest that most patients were committed to their treatment, supporting better clinical outcomes.

Table 7: Treatment Compliance of Gastritis Patient

Compliance Category	Number of Patients	Percentage (%)
Regular adherence to prescribed regimen	85	85%
Irregular adherence	10	10%
Non-adherence	5	5%

Patient Satisfaction with Treatment

As shown in Table 5.8, patient satisfaction levels were notably high, with 92% of gastritis patients reporting they were either "very satisfied" (46%) or "satisfied" (46%) with their treatment. Only a small fraction expressed dissatisfaction, with 7% being "dissatisfied" and just 1% "very dissatisfied," indicating overall positive treatment outcomes and patient perception

Table 8: Patient Satisfaction of Gastritis

Satisfaction Level	Number of Patients	Percentage (%)
Very satisfied	46	46%
Satisfied	46	46%
Dissatisfied	7	7%
Very dissatisfied	1	1%

Conclusion

This study offers a comprehensive assessment of the efficacy of various treatment strategies in managing gastritis among 100 patients, highlighting the value of a multifaceted approach that integrates pharmacological therapy with lifestyle and dietary modifications. Proton Pump Inhibitors (PPIs) emerged as the most commonly prescribed and effective treatment, aligning with clinical guidelines due to their ability to significantly reduce gastric acid secretion and support mucosal healing. Adjunctive therapies, including H2-receptor antagonists, antacids, and antibiotics targeting *Helicobacter pylori* infection, contributed to symptom resolution and management of underlying etiological factors. These pharmacological interventions were shown to effectively address both acute and chronic manifestations of gastritis. Equally important were the dietary modifications recommended to patients, such as avoiding spicy, fatty, and caffeinated foods, which played a crucial role in reducing gastric irritation and accelerating symptom improvement. High levels of treatment adherence (85%) and patient satisfaction (92%) observed in this study underscore the impact of effective patient counselling, shared decision-making, and individualized care. These findings support a holistic, patient-centered approach to gastritis management, in which lifestyle changes enhance the therapeutic effects of medication. The positive outcomes also suggest that reinforcing patient education and regular follow-up can significantly improve compliance and treatment efficacy. In conclusion, the study confirms the clinical value of combining pharmacological and non-pharmacological strategies in the management of gastritis. Future research should explore the long-term sustainability of these outcomes and investigate how digital health tools and remote monitoring can further enhance adherence, symptom tracking, and quality of life in patients with gastritis.

Limitations and Recommendations

The present study, while providing valuable insights into the efficacy of various treatment approaches for gastritis, has certain limitations. The most notable constraint was the limited study duration, which restricted long-term follow-up and evaluation of sustained treatment outcomes. Additionally, due to the time-consuming nature of data collection and analysis, the study was confined to a relatively small sample size, limiting the generalizability of the findings. Based on these limitations, future research is recommended to involve larger, more diverse populations over extended periods to better understand treatment effectiveness and quality-of-life outcomes. Further investigations could also explore different drug regimens in greater detail, including the assessment of adverse drug reactions (ADRs), drug-drug interactions, and their impact on therapeutic success and patient safety. Such extended studies would enhance the evidence base for optimizing gastritis management through more personalized and comprehensive treatment strategies.

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Nil

Conflict of Interest
The authors declare that there are no conflicts of interest regarding the publication of this paper.

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Author Contributions
Paspula Soumya conceptualized and designed the study, supervised the research process, and finalized the manuscript. Mohammadi Khizra and Gangula Divya managed patient recruitment and data collection. Afshah Nowsheen and Faheemunnisa performed data entry, statistical analysis, and interpretation. Devulapally Dhanraj contributed to result validation and drafting of the methodology. Kauser Erum Yousuf critically reviewed the manuscript, provided revisions, and approved the final version. All authors read and approved the final manuscript and agree to be accountable for its content.

Ethical Statement
Ethical clearance was obtained from the Institutional Ethics Committee of SVS Medical College and Hospital, Mahbubnagar (Approval No: IEC/DHR 01/(02/08)2025/021/8).

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