EJPMR, 2026, 13(11), 256-259 **Research Article** **Impact Factor: 8.158**

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

ISSN (O): 2394-3211
ISSN (P): 3051-2573
Coden USA: EJPMAG

A PROSPECTIVE OBSERVATIONAL STUDY FOR RISK FACTORS OF ACUTE GASTROENTERITIS AT A TERTIARY CARE HOSPITAL

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DOI: https://doi.org/10.5281/zenodo.23799015

How to cite this Article: Dr. Goutham Gowda B.*[1], Dr. Umesh M.[2], Dr. Hanumanthachar Joshi[3]. (2026). A Prospective Observational Study For Risk Factors of Acute Gastroenteritis At A Tertiary Care Hospital. European Journal of Pharmaceuticaland Medical Research, 13(11),256–259.
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Article Received on 05/10/2026 **Article Revised on 25/10/2026** **Article Published on 01/11/2026**

ABSTRACT

Background: Acute gastroenteritis is a common gastrointestinal condition observed among patients with acid peptic disorders. among 85 patients, 71.76% (n=61) were diagnosed with Acute GE,23.52%. **Objective:** To analyze risk factors of acute gastroenteritis. **Methods:** A prospective observational study was conducted with a total sample size of 85 patients. Subgroup data of acute gastroenteritis patients were extracted and analyzed. **Results:** Risk factors such as diet, lifestyle, and socioeconomic variables were identified. Electrolytes and antibiotics were commonly prescribed drug classes. **Conclusion:** Acute gastroenteritis is influenced by modifiable risk factors, and treatment primarily involves rehydration and supportive therapy.

KEYWORDS: Acute Gastroenteritis, Acid Peptic Disease, Drug Utilization, Risk Factors.

1. INTRODUCTION

Acute Gastroenteritis

Definition: Gastroenteritis is inflammation of the stomach, small intestine, or large intestine that results in problems like abdominal pain, diarrhoea, cramping, nausea, and vomiting. Acute gastroenteritis can usually last fewer than 14 days. This is in contrast to persistent gastroenteritis, that can last between 14 and 30 days, and in chronic gastroenteritis, which lasts more than 30 days.[8]

Prevalence: Of 175 articles included, the pooled prevalence of norovirus in 187 336 patients with acute gastroenteritis was 18% (95% CI 17–20). Norovirus prevalence tended to be higher in cases of acute gastroenteritis in community (24%, 18–30) and outpatient (20%, 16–24) settings compared with inpatient (17%, 15–19, p=0·066) settings. Prevalence was also higher in low mortality developing (19%, 16–22) and developed countries (20%, 17–22) compared with high-mortality developing countries (14%, 11–16; p=0·058). Patient age and whether the study included years of novel strain emergence were not associated with norovirus prevalence.[3]

Etiology: Acute gastroenteritis can be caused by many infectious agents, it can be Viral, Bacterial and Parasitic. About 50% -70% cases were caused due to viral infections, examples include Norovirus, Rotavirus, Enteric adenovirus types 40 and 41, Astrovirus, Coronavirus and Some picornaviruses. Rotavirus can cause severe dehydration in gastroenteritis that mainly affects young children. Rotavirus can severely cause symptoms in malnourished children worldwide. Norovirus however causes epidemic outbreaks in some group settings like schools, nursing homes, cruise ships, prisons etc. and can affect persons of all age groups. It can be transmitted through fecal-oral route. Enteric adenovirus and rotavirus are detected easily through viral antigen in stool assays. However, norovirus can be detected by reverse transcriptase polymerase chain reaction. The Medications and toxic ingestions may also cause Gastroenteritis and acute diarrhoea. Medications include Antibiotics, Laxative abuse, Sorbitol Colchicine, Cardiac antidysrhythmic, Nonsteroidal anti-inflammatory drugs, Chemotherapeutics, Antacids. Toxic ingestions include Organophosphates, Poisonous mushrooms, Arsenic, Ciguatera or scombroid. Chronic or persistent gastroenteritis can be caused due to

medications, parasitic infections, inflammatory bowel disease, eosinophilic gastroenteritis, celiac disease, colorectal cancer, bowel obstruction, malabsorption, and ischemic bowel. Immunocompromised hosts like Cryptosporidium and Giardia are most vulnerable to chronic gastroenteritis infections. Cryptosporidium would cause chronic diarrhoea for those patients affected with AIDS. It can be easily transmitted through contact with contaminated surfaces or by person-to-person contact. Giardia can also cause chronic gastroenteritis and are found in contaminated streams and in some day, care centers and swimming pools.[20]

Diagnostics

1. Fecal leukocytes and occult blood could detect the presence of a bacterial cause of the acute gastroenteritis.
2. Fecal lacto ferrin: When there are symptoms like fever, tenesmus, or bloody stool, this test is recommended. Lactoferrin is a marker for fecal leukocytes, with higher sensitivity.
3. Stool cultures is helpful.
4. Difficile assay can be done.
5. Stool ova and parasites: Testing stool for ova and parasites are done. Here, three samples are taken on three consecutive days, and should be sent to catch parasite excretion.[3]

Types of acute gastroenteritis

1. Traveler's Diarrhea
2. Foodborne Acute Gastroenteritis
3. Antibiotic-Associated Diarrhea.

2. MATERIALS AND METHODS

Study Design: Prospective observational study.
Study Site: Aadithya Adhikari Hospital, Mysuru.
Sample Size: 85 patients.
Subgroup: Patients diagnosed with acute gastroenteritis.
Data Collection: Patient demographics, risk factors, and drug utilization were recorded.
Statistical Analysis: Data expressed as frequency and percentage.

3. RESULTS

Distributions of patients based on demographics

Out of 85 subjects, female [61.17%, n=52] patients are majorly seen in affecting with Acid peptic Disease than Male [38.82%, n=33]. The average age of the patients was 30 years while the majority [n=25, 29.41%] of them were in the age group of 18-30 years followed by [n=23, 27.05%] in 31-40 years, [n=12, 14.11%] in 41-50 years, [n=11, 12.94%] in 61-70 years, [n=9,10.58%] in 51-60 years, and the least [n=6, 7.05%] in 71-90 years category. [79.9%] are Literate among these [16.4%] are Primary, [20.5%] are PUC and [47.05%] are Graduated. [8.23%] are from Higher class, [91.76%] are from Middle class family. Data suggested that [69.41%] are Non vegetarians and [30.58%] are Vegetarians. A total of 68 [79.9%] patients were literate and with low socio-economic status [n=78, 91.76%]. Data also showed that [17.64%] patients were Smokers and [18.82%] are Alcoholic. Past history of medical comorbidity was observed in 21.9% (n=17) of patients, among these, [8.2%] Hypertensive with Diabetic, [4%] Hypertensive, [4%] Diabetic, [1%] Hypertensive, Diabetic and Ischemic Heart Disease, [1%] Diabetic with Hypothyroidism, [1%] Hernia, [1%] Menopause at 22 years age. and majority of study subjects are married (77.64%).

Distribution of Disease Types

From the result, among 85 patients, 71.76% (n=61) were diagnosed with Acute GE, 23.52% (n=20) were diagnosed with Gastritis and 80% (n=80) were diagnosed with GERD.

Factors	Demographics data			P value	Significance (less than 0.05% considered as significant)
Age	18-50	43	16	0.73	Not significant
	50-90	18	8		
Gender	Male	21	12	0.47	Not significant
	Female	37	15		
literacy	Literate	47	20	0.52	Not significant
	Illiterate	14	4		
Occupation	**Workers**	**29**	**19**	**0.008***	**Significant**
	Non workers	**32**	**5**		
diet	Veg	18	8	0.73	Not significant
	Non veg	43	16		
Marital status	**Married**	**52**	**14**	**0.007***	**Significant**
	Unmarried	**9**	**10**		
Smoking	Smokers	9	6	0.26	Not significant
	Non smokers	52	18		
Alcohol	Alcoholic	10	6	0.36	Not significant
	Non alcoholic	51	18		

Risk Factor Analysis (Acute Gastroenteritis
For acute GE, occupation and marital status was the significant factor.

DISCUSSION

The findings indicate that acute gastroenteritis within acid peptic disease patients is influenced by multiple demographic and lifestyle factors. The treatment pattern emphasizes fluid replacement and symptomatic management.

- Data regarding the demographic details of patients in our study showed that the majority of patients admitted for acid peptic disease were female subjects. Percentage of female subjects included in our study was 61.17% which was found similar to the study conducted by where Among the total study participants, 246 (67.6%) were females, while 118 (32.4%) were males and in contrast to the study conducted by Arun Gupta, darpan bansal, Manan s Malhotra, et al where the subjects 80.5% was more in male compared to female.
- This study highlighted that most commonly affecting with this disease in the range between 18-40 years which was found similar to the study conducted by where Nearly half of the study participants, 181 (49.7%) were between the age of 18–28 years old, 146 (40.1%) were between 40–50 years old, while only 21 (5.8%) and 16 (4.4%) were aged 29–39 and above 50 years old, respectively Pooja Chandran, C. Arul Prakasam, et al, in 70 percent of patients it usually occurs between the ages of 25 and 64 years.
- Our study also revealed that, the risk factor associated with this acid peptic disease were, Occupation, marital status, and age, which was found slight similar to study conducted by Manohar Shankarrao Chavan, M. Bhaktavatsalam et al, where the significant risk factors were found to be age, lower social class, alcohol use, tea, and use of NSAID.
- The study revealed that the majority of the patients (47.05%, n=40) were Graduated, (32.94%, n=28) were studied in high school and (20%, n=17) were Illiterate which was found similar to the study conducted by Feyisa ZT, Woldeamanuel BT et al, where the majority of the study participants 154 (42.3%) were attended college or higher education, 125 (34.3%) were attended primary school, while only 85 (23.4%) were completed high school.
- From the data analysis, majority of the patient (77.64%, n=66) were married and (22.35%, n=19) were Unmarried which in contrast to the study conducted by Feyisa ZT, Woldeamanuel BT et al, where the majority of the study participants 161 (44.2%) were unmarried, 147 (40.4%) of them were married, while only 36 (9.9%) and 20 (5.5%) were divorced and widowed, respectively.
- In our study the majority of the patient (57.64%, n=49) were unemployed and (42.36%, n=36) were employed which in contrast to the study conducted by Feyisa ZT, Woldeamanuel BT et al, where nearly half, 166 (45.6%) of the study participants were unemployed, while nearly one-fourth, 85 (23.4%) were governmental employees, nearly one-fifth, 79 (21.7%) were self-employed and only 34 (9.3%) were non- governmental employees

5. CONCLUSION

Acute gastroenteritis represents a significant subset of acid peptic disease. Proper identification of risk factors and rational drug utilization are essential for effective management.

This study helps in evaluating the existing drug use pattern, Calculate the prevalence of acid peptic disease in India, to identify the risk factor associated with this disease, and to make appropriate interventions required to provide optimum healthcare services to the community.

This survey helps to estimate the important risk factor like Occupation, marital status, and age, which can provide the public awareness about this disease.

Prevalence of our study was 16.6%, Out of 512 study population, 16.6% were diagnosed with acid peptic disease.

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