

Case Report

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Acute Gastroenteritis in a Young Adult Female: A Case Report from a Tertiary Hospital in Ghana



Francis Mawounon Sagbo*

University of Health and Allied Sciences, School of Nursing and Midwifery, PMB 31, Ho, Volta Region, Ghana

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***Corresponding author:** Francis Mawounon Sagbo, University of Health and Allied Sciences, School of Nursing and Midwifery, PMB 31, Ho, Volta Region, Ghana, ORCID ID: <https://orcid.org/0009-0006-2110-2323>

Abstract

Background: Acute gastroenteritis is a common cause of emergency admissions worldwide and remains a significant public health concern in low- and middle-income countries due to the risk of dehydration and electrolyte imbalance.

Case Presentation: A 21-year-old Ghanaian female presented to the Accident and Emergency Unit of a Teaching Hospital with severe right-sided abdominal pain radiating to the back and thighs, vomiting, generalized weakness, and fever. Clinical assessment and laboratory investigations supported a diagnosis of acute gastroenteritis. She was managed with intravenous fluids, antibiotics, antipyretics, and antiemetics, alongside comprehensive nursing care guided by the nursing process.

Management and Outcome: The patient responded well to treatment, with resolution of fever, abdominal pain, vomiting, and improvement in appetite and functional status within four days. She was discharged in stable condition and followed up at home with no complications.

Conclusion: Prompt diagnosis, appropriate medical treatment, and holistic nursing care were central to the patient's recovery. This case highlights the importance of integrated nursing and medical management of acute gastroenteritis in emergency settings.

Keywords: Acute gastroenteritis; case report; nursing care; dehydration; emergency care; Nursing management, Nursing practice

Introduction

Acute Gastroenteritis (AGE) is an acute inflammatory condition of the stomach and intestines that presents with diarrhea, vomiting, abdominal pain, and fever, and continues to be a major cause of morbidity and mortality worldwide (World Health Organization [WHO], 2024) [1]. Global burden estimates indicate that diarrhoeal diseases were responsible for an estimated 1.17 million deaths in 2021, with the highest burden concentrated in low- and middle-income regions where access to safe water, sanitation, and healthcare is limited [2]. Viral agents such as norovirus and rotavirus remain leading causes of AGE: norovirus alone is estimated to cause hundreds of millions of cases annually, while rotavirus has historically generated a large share of severe paediatric diarrhoeal disease prior to and despite vaccine roll-out [3-4].

The burden of AGE is disproportionately felt in sub-Saharan Africa, and national studies in Ghana demonstrate that diarrhoeal illness continues to contribute substantially to child morbidity and

mortality, with trends showing high, though gradually declining, prevalence in children under five [5]. In Ghana, foodborne and waterborne transmission routes often linked to inadequate food handling, street-vended food practices, and gaps in food safety surveillance amplify the risk of gastroenteritis across all age groups, including working adults who commonly rely on informal food vendors [6-7]. Where treatment is delayed or access to rehydration and supportive care is limited, AGE can rapidly progress to severe dehydration, electrolyte disturbances, acute kidney injury, and shock complications that substantially increase morbidity, prolong hospitalization, and raise the risk of mortality [8-9].

Given this epidemiological context, cases of severe AGE presenting to emergency units require prompt clinical assessment and integrated management that combines fluid resuscitation, targeted antimicrobial therapy when indicated, and structured nursing care. This case report describes the clinical presentation,

diagnostic investigations, medical and nursing management, and outcome of a young adult female with acute gastroenteritis managed at a tertiary hospital in Ghana, and illustrates how timely, evidence-based interventions can avert progression to life-threatening complications.

Case Presentation

Patient Information

A 21-year-old Ghanaian woman arrived at the Accident and Emergency Unit of a teaching hospital with acute symptoms. She lived independently and worked at a local betting center. Her medical history was unremarkable, with no known drug or food allergies and no chronic illnesses.

Presenting Complaints

The patient reported severe right-sided abdominal pain radiating to the back and thighs, generalized body weakness, vomiting (three episodes), and fever. There was no history of bloody vomitus or stool.

Clinical Findings

On admission, the patient was conscious, alert, and oriented but appeared weak and in pain, with a temperature of 38.9°C, a pulse of 123 beats per minute, a respiratory rate of 18 cycles per minute, blood pressure of 118/91 mmHg, and an oxygen saturation of 98% on room air.

Diagnostic Assessment

Investigations conducted included random blood sugar, malaria rapid diagnostic test, urine pregnancy test, urine dipstick, full blood count, typhoid serology, *Helicobacter pylori* test, and abdominopelvic ultrasound. Results were within normal limits, with no evidence of malaria, pregnancy, typhoid fever, or abdominal pathology. Based on clinical presentation and investigation findings, a diagnosis of acute gastroenteritis was made.

Therapeutic Interventions

Medical Management

- The patient was treated with:
- Intravenous Ciprofloxacin
- Intravenous Metronidazole
- Intravenous Paracetamol
- Intravenous normal saline and Ringer's lactate
- A stat dose of intravenous Metoclopramide

These interventions aimed to control infection, relieve pain and fever, manage vomiting, and correct fluid deficits.

Nursing Management

Comprehensive nursing care was provided using the nursing process. Identified nursing problems included hyperthermia, acute abdominal pain, risk for deficient fluid volume, self-care deficit, risk for imbalanced nutrition, disturbed sleep pattern, and knowledge deficit.

Nursing interventions focused on:

- Monitoring and managing vital signs and fever
- Pain assessment and relief
- Strict intake and output monitoring
- Encouraging oral fluid intake and gradual nutritional support
- Assisting with activities of daily living during periods of weakness
- Promoting rest and sleep by minimizing noise and disturbances
- Educating the patient on the disease condition, treatment, and preventive measures

Outcome and Follow-Up

The patient showed steady clinical improvement over four days of hospitalization. Fever subsided, abdominal pain resolved, vomiting ceased, and appetite improved. She regained independence in activities of daily living and reported improved sleep. She was discharged home in stable condition with oral medications and education on prevention of recurrence. Follow-up and home visits revealed no complications.

Discussion

This case demonstrates a classic clinical presentation of acute gastroenteritis in a young adult, characterized by abdominal pain, vomiting, fever, and generalized weakness. Consistent with existing literature, although acute gastroenteritis is frequently self-limiting, delayed or inadequate management can result in dehydration, electrolyte imbalance, and systemic complications, particularly in patients presenting with severe symptoms [10-11].

Early clinical assessment and prompt initiation of fluid resuscitation were central to the favorable outcome observed in this case. Evidence consistently identifies rehydration, oral or intravenous as the cornerstone of acute gastroenteritis management, as fluid loss remains the principal cause of morbidity and mortality [12]; (World Health Organization [WHO], 2019) [13]. The use of isotonic intravenous fluids in this patient aligns with international recommendations for individuals presenting with vomiting, fever, and signs of dehydration that limit oral intake [10].

The administration of antimicrobial therapy in this case is supported by published guidelines recommending targeted or empiric antibiotics in patients with severe disease, systemic symptoms, or suspected bacterial etiology [14,10]. The combined use of ciprofloxacin and metronidazole has been reported in clinical practice for suspected bacterial gastroenteritis, particularly in settings where diagnostic confirmation may be delayed and polymicrobial exposure is likely [11]. The patient's rapid clinical improvement without complications supports the appropriateness of this therapeutic approach.

Beyond pharmacological treatment, structured nursing care played a critical role in recovery. Evidence indicates that nursing interventions such as close monitoring of vital signs, intake and output assessment, fever management, nutritional support, and promotion of rest significantly reduce complications and length of hospital stay in patients with acute gastrointestinal illnesses [15]. In this case, the application of the nursing process ensured timely identification and management of hyperthermia, pain, risk for fluid deficit, and nutritional imbalance, contributing to holistic care and recovery.

Patient education was also a key component of management. Studies have shown that education on food hygiene, safe water consumption, medication adherence, and early symptom recognition reduces recurrence and improves long-term outcomes in gastroenteritis [13,16]. The patient's demonstrated understanding of preventive measures at discharge further supports the role of health education as an essential element of comprehensive care.

Overall, this case reinforces existing evidence that effective management of acute gastroenteritis requires an integrated approach combining early assessment, appropriate medical therapy, and comprehensive nursing care. Such multidisciplinary management is particularly important in emergency settings within low- and middle-income countries, where delayed treatment can substantially increase morbidity.

Conclusion

Acute gastroenteritis can present with severe symptoms requiring emergency care. This case demonstrates that prompt medical treatment combined with holistic, patient-centered nursing care can result in rapid recovery and prevent complications. Strengthening preventive education on food hygiene and safe water consumption is essential.

Recommendations

Early and systematic assessment of patients presenting with symptoms of acute gastroenteritis in emergency settings is strongly recommended to facilitate prompt identification of dehydration and potential complications. Timely initiation of fluid resuscitation

and appropriate antimicrobial therapy, guided by clinical severity and existing treatment guidelines, should be prioritized to improve outcomes. In addition, integrating structured patient education on food hygiene, safe water consumption, medication adherence, and early health-seeking behavior into routine care may reduce recurrence and prevent avoidable complications. Ongoing training and adherence to evidence-based protocols are essential to ensure consistent and effective management of acute gastroenteritis.

Implications for Nursing Practice

This case highlights the pivotal role of nurses in the management of acute gastroenteritis through early recognition of symptoms, continuous monitoring of hydration status, and implementation of timely nursing interventions. The use of the nursing process enabled holistic and individualized care, addressing not only physiological needs such as fever control, pain relief, and nutrition, but also psychosocial support and patient education. Nurses are uniquely positioned to deliver targeted health education and reinforce preventive practices, thereby improving patient outcomes and reducing hospital readmissions. Strengthening evidence-based nursing practice and interdisciplinary collaboration is therefore essential in optimizing care for patients with acute gastroenteritis.

Ethical Considerations

Written informed consent was obtained from the patient for publication of this case report. Patient anonymity has been strictly maintained.

Conflict of Interest

The author declares no conflict of interest.

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