# Aresearch Article on Gastroenteritis

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**ABSTRACT**
Acute gastroenteritis is a very common disease. It causes significant mortality in developing countries,significant economicburden todevelopedcountries.Gastroenteritis is inflammation of intestines and stomach which present with vomiting, fever,abdominal pain and diarrhea. It could be persistent acute and chronic and also be classified asinfectious or non-infectious. Despite improvement in management mortality can reach upto 17,000. Inthis study our aim was to understand the various etiologies that cause gastroenteritis in adults and alsodiscuss methods of management. We conducted this and following search terms were used acutegastroenteritis, diarrheal disease, viral gastroenteritis, bacterial gastroenteritis and diagnosis ofgastroenteritis. The largest portion of gastroenteritis cases is due to viral infection. Therefore, the use ofantibiotics is usually not recommended. However, in selected patients emperic antibiotics therapy isindicated and is associated with significant improvement and decrease in mortality. The primary goal ofmanagementofgastroenteritis is treatingdehydration.Our objective was to study the causes and characteristics of community acquired, acute gastroenteritisinadult hospitalized patientsto support theclinicalmanagementofthesepatients. Toestimatetheincidentsandriskfactorsforgastroenteritisrelatedhospitalizationsinolderadults.
**KEYWORDS**: Gastroenteritis, Infectious, Vomiting, Diarrhea, Abdominalpain.

## I.    INTRODUCTION

Gastroenteritis is defined as inflammation of the stomach and intestines that may result in awide rangeof symptoms from asymptomatic infections through mild complaints to life-threatening conditions thatleadtodeath. Gastroenteritis is an infection of the digestive tract that leads to vomiting anddiarrhea.Itismostoftencaused by avirus, andmuch lessoftenby bacteria. Acute infectious gastroenteritis is a common illness seen around the world, and most cases are causedbyviralpathogens.Theacutediarrheal diseaseis generallyself-limited. In underdeveloped countries, viral diarrheal diseases are a significant cause of death, especially ininfants. Viral gastroenteritis is a known cause of nausea, vomiting, diarrhea, anorexia, weight loss, anddehydration. Isolated cases can occur, but viral gastroenteritis more commonly occurs in outbreakswithin close communities such as daycare centers, nursing facilities, and cruise ships. Many differentviruses can lead to symptomatology, though in routine clinical practice the true causative virus isgenerally not identified. Regardless of the viral cause, treatment is generally uniform and directedtoward symptomatic.

There are two primary mechanisms responsible for acute gastroenteritis whichare:

- Damageto thevillousbrushborderoftheintestine,whichresultinmal-absorptionofthe intestinalcontents leadingtoanosmotic diarrheaand

The release of toxins that bind to specific enterocyte receptors thereby causing the release of chlorideions.

**Theprimarymechanismforbacterialgastroenteritisis:**
- Excessive secretion of fluids in the proximal small intestine induced by the action of the luminal toxinexpressedbyentero-pathogens orminimallyinvasivebacteria.
- Inflammatoryorcytotoxicdamageoftheilealor colonicmucosa whichmay produce blood.
- Penetrationofthebacterium throughthemucosainto the reticuloendothelialsystem,asisthecaseoftyphoid fevermovementwith afocusonhydrationstatus.

Over 1.7 billion global causes of diarrheal disease are reported annually which result in an estimated 2.2million deaths. The burden of diarrhea disease is quite critical in developing

countries as a result ofunsafewater supplies,nutritional deficienciesandvery poor sanitation.

Gastroenteritis is a very common condition that causes diarrhea and vomiting and most cases in childrenare caused by a virus called Rotavirus. Cases in adult are usually caused by Norovirus which is usuallyassociated with vomiting during winter or bacterial food poisoning. Diarrhea is defined by infectiousDiseases Society of America (NSA) and the American College of Gastroenteritis (ACG) as the passage of 3ormoreloose orliquidstoolsperday.Durationofsymptomsisalsouse dtoclassifydiarrheafor >14days but ≤ 1 month are said to have persistent diarrhea, those experiencing diarrhea for longer than 30days are said to have chronic diarrhea. Diarrhea may be infectious i.e., caused by bacteria, viruses orparasites but with increasing frequency in high income countries, the etiology of diarrhea is non-infectious. In developed countries, diarrhea is caused by food, intolerance, reaction to medicationintestinal disorders is like irritable bowel syndrome or intestinal disorders including Crohn's disease,ulcerative colitis and celiac disease. In the above instance, laboratory tests for infectious etiology,including a bacterial stool culture, are useful for reliable diagnosis for definitive diagnosis of bothinfectious and non-infectious gastroenteritis. Diagnosis clinical diagnosis of gastroenteritis is often basedon several symptoms. People with gastroenteritis usually have pain in the abdomen, belching, diarrhea,flatulence, gagging, indigestion, nausea, stomach cramps or vomiting. The general whole-bodysymptomsincludedehydration,fatigue, fever,chills,lethargy,lightheadednessorlossofappetit e.

The most common causes of gastroenteritis are a viral or bacterial infection but less commonly ofparasitic etiology. The most common causes of bacterial gastroenteritis are Escherichia coli, Salmonella,Shigella, Yersinia enterocolitica, Aeromonas species and Campylobacter while most virus causes areNorovirus, Adenovirus, Coronavirus, Astroviruses, Enteroviruses and Rotavirus. Parasites implicatedin gastroenteritis include Cryptosporidium which infection is contracted in contaminated swimming pooland accidentally swallowing water or surfaces if hands are not properly washed after going to the toilet.Giardiasis, a parasitic infection is caused by eating contaminated water, handling infected animals orchanging the nappy of an infected baby without washing hands afterwards. Certain chemicals like leadcan trigger gastroenteritis and certain medication such as antibiotics, can cause gastroenteritis insusceptible people. Although infectious gastroenteritis usually resolves in its own, i.e., it is self-limiting insome cases.
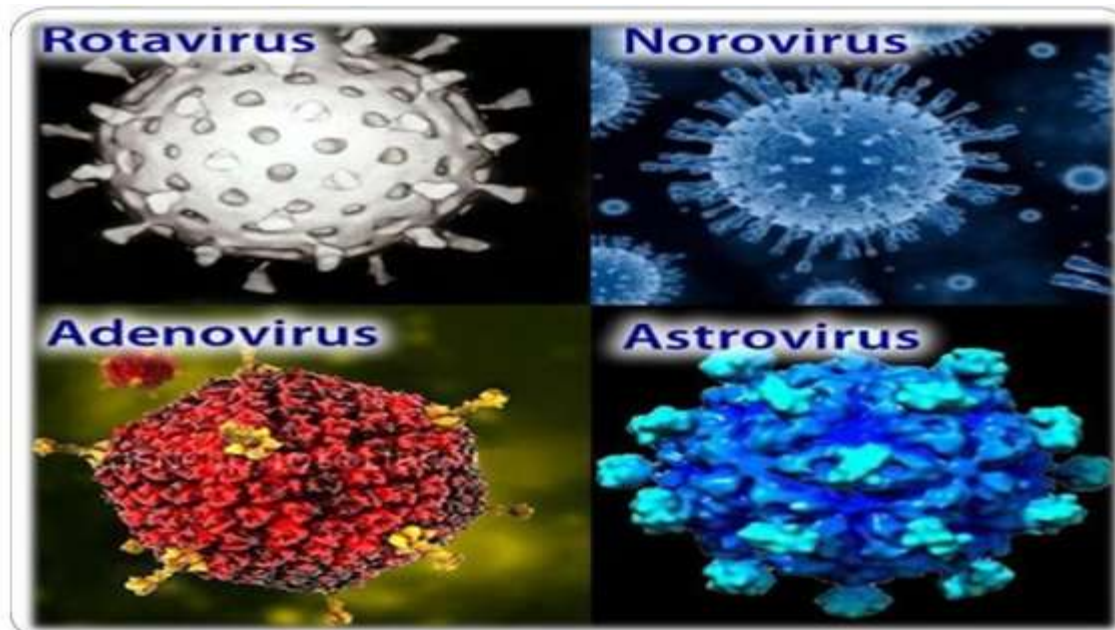
## SYMPTOMSOFGASTROENTERITIS

Most of the stomach infection are spread through contamination food and water cause pain anddiarrhea.

- Nauseaandvomiting
- diarrhea
- lossofappetite
- fever
- headache
- abdominalpain
- abdominalcramps
- bloodystools
- dehydration

If symptomsdo not resolve within a week, an infection or disorder more serious thangastroenteritismay beinvolved. These symptomsrequirepromptmedicaltreatment.

## TYPESOFGASTROENTERITIS

- viralgastroenteritis
- bacterialgastroenteritis
- amoebicdysentery
- bacillarydysentery

➢ Viral gastroenteritis is an intestinal infection that includes signs and symptoms such as watery diarrhea,stomachcramps,nauseaorvomiting,and sometimesbacterialgastroenteritis is adigestive problem caused by bacteria. Symptoms include nausea, vomiting, fever, diarrhea, abdominal cramping, and pain.In severe cases, you may become dehydrated and have an electrolyte imbalance. Bacterialgastroenteritisis sometimes treatedwith antibiotics.

➢ Bacterial gastroenteritis is a digestive problem caused by bacteria. Symptoms include nausea, vomiting,fever, diarrhea, abdominal cramping, and pain. In severe cases, you may become dehydrated and haveanelectrolyteimbalance. Bacterial gastroenteritis issometimestreatedwithantibiotics.

➢ Amoebiasis infection is most common in tropical areas with untreated water. It spreads through drinkingoreatinguncooked food,such as fruit,thatmayhavebeenwashedincontaminatedlo calwater.

➢ Bacillary dysentery is an intestinal infection caused by a group of Shigella bacteria which can be found inthehumangut.Clinicalfeatures.Infectionby Shigellamaybeasymptomaticoronly

causemildillness.

The treatment of gastroenteritis depends on the cause and the severity of symptoms and mayinclude antibiotics or simply supportive care. Adults tend to have milder cases of the illness than dochildrenandtheveryold,whorunthe riskofdehydrationduetodiarrheaandvomiting.

## DIAGNOSIS

Gastroenteritis is usually diagnosed by the symptoms that it produces, primarily diarrhea. However, ifthe symptoms are severe or persistent, your doctor may take a stool (feces) sample to identify thecauseofthegastroenteritis.Stool samples may be taken during outbreaks of gastroenteritis, such as those occurring on cruise shipsand in hospitals and nursing homes, to identify the virus or bacteria that has caused the outbreak. Also,identifying patients with similar histories of food or drink they have recently consumed often helps todetermine thesourceoftheoutbreak.

## TREATMENT

- Most people with gastroenteritis recover within a few days without the need for medical treatment, aslongas theystayproperlyhydrated.
- To help keep yourself comfortable and prevent dehydration while you recover, try the following:Avoiddairy products, caffeine,alcohol,andnicotine.

Avoidsugary,fatty,orhighlyseasoned(spicy)foods.

- Drink plenty of liquid every day, taking small, frequent sips, including clear thin broths or soups, dilutednon-caffeinated sports drinks (e.g., Powerade or Gatorade), and rehydration formulas(e.g., Gastrolyte)that areavailablewithoutprescriptionfromapharmac y. Makesurethatyouget plentyof rest.
- Avoid taking non-steroidal anti-inflammatory drugs (NSAIDs), such as aspirin, ibuprofen, and diclofenac,forpainreliefasthey canmakeyour stomachmoreupset.Paracetamol(e.g.,Panadol)c anbetakenforfever andpain,butitshouldbeusedcautiously.
- Anti-diarrheal medications, such as Imodium, can be taken to slow the diarrhea. In most cases,however, it is better for the body to clear itself of the virus or bacteria causing the gastroenteritis. Use ofantibiotics is usually avoided because they are not effective against viruses, and their overusecontributestothedevelopmentofantibioti c-resistantstrainsof bacteria.
- **Medical Treatment**: If the patient is not able to take fluids by mouth because of vomiting,

an IV may beinserted to restore fluids back into the body for rehydration. A surgeon, toxicologist, gastroenterologist,orotherspecialist's evaluationmay berequiredforseveresymptoms.

- Antibiotics are generally not given until a specific bacterium has been identified as using wrong antibiotics canworsen someofthe infections orprolongtheirlife.

## PREVENTION
Thefollowingactionscanbetakento avoidgettingandspreadinggastroenteritis:

- Frequent and thorough hand washing, especially before eating or preparing food, and after going to thetoilet or contactwithan infected person.
- Ensure that children wash their hands frequently and thoroughlyavoiddirectcontactwith infectedindividuals,ifpossible stay home from work and keep children away from day care or school until symptoms have gone.
- Cleaning and disinfecting kitchen surfaces, especially after working with raw meat or chicken, or eggs
- Avoideatingundercookedfoods,especiallymeat, chicken, andfish.
- Avoiddrinkinguntreatedwater

Each year in the United States, millions of people develop gastroenteritis by eating contaminated food,whilemillionsmoresuffer frommildboutsofviralgastroenteritis. Inotherwisehealthyadults,bothforms of gastroenteritis tend to be mild and brief, and many episodes are never reported to a doctor.However, in the elderly and people with weakened immune defenses, gastroenteritis sometimes canproduce dehydration and other dangerous complications. Even in robust adults, certain types ofaggressive bacteria occasionally cause more serious forms of food poisoning that can cause high feverandsevereregastrointestinalsymptoms, suchasbloodydiarrhea.

Theseverityofgastroenteritismainly dependsonanindividual'simmunesystem'sabilitytofi ghtwiththe infection. Electrolytes and fluids may be lost due to vomiting and diarrhea. Many people recovereasily by drinking fluids and going back to a normal diet, but recovery may not be easy in infants andelderly people sometimes leading to life-threatening illness unless fluids are restored, and condition istreated.

## PATHOPHYSIOLOGY OF GASTROENTERITIS
Therearedifferentbacterialspeciesthatcausegastroent eritis,andtheywillactonthe gastro-intestinalsystemin differentways.

There are bacteria, which enter the gastrointestinal tract and attach themselves to the intestinalmucosa or lining where they begin to secrete toxins. These bacteria do not attack intestinal mucosacells. The toxins secreted by them have an impact on nutrient absorption leading to mal-absorption and cause the mucosal cells to secrete electrolytes and water. This will be seen as profuse watery diarrheawithvomitingthat generally startswithin12 to48hours ofingestion.

There are other bacteria that attack the mucosal cells causing bleeding and ulceration. This leads toinflammatory diarrhea, which is coupled with bloody diarrhea sometimes and the patient also hassignificantabdominal pain. This gastrointestinal inflammation and irritation causes the typical signs and symptoms like fever,nausea,vomiting,abdominalpain,anddiarrheat hatareseenincasesof bacterialgastroenteritis.

## II. METHODOLOGY
**AIM:** To Assess the study of Gastroenteritis in tertiary care hospitals.
**OBJECTIVES:**To investigate the presenting clinical features of acute bacterial gastroenteritis in adult patients treatedas outpatients in the emergency department and the pathogens responsible in this setting andpopulationsandtoidentifythefrequencywithpositi vestoolcultureresultchangesmanagement.
**STUDY SITE**: VijayMarie hospital, khairatabad, Hyderabad.

### INCLUSIONCRITERIA:
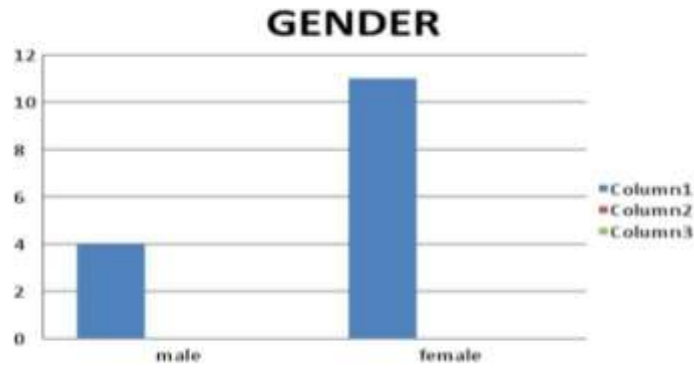- ThepatientswithconfirmedPUDdiagnosis.
- Thepatients above18years.

### EXCLUSIONCRITERIA:
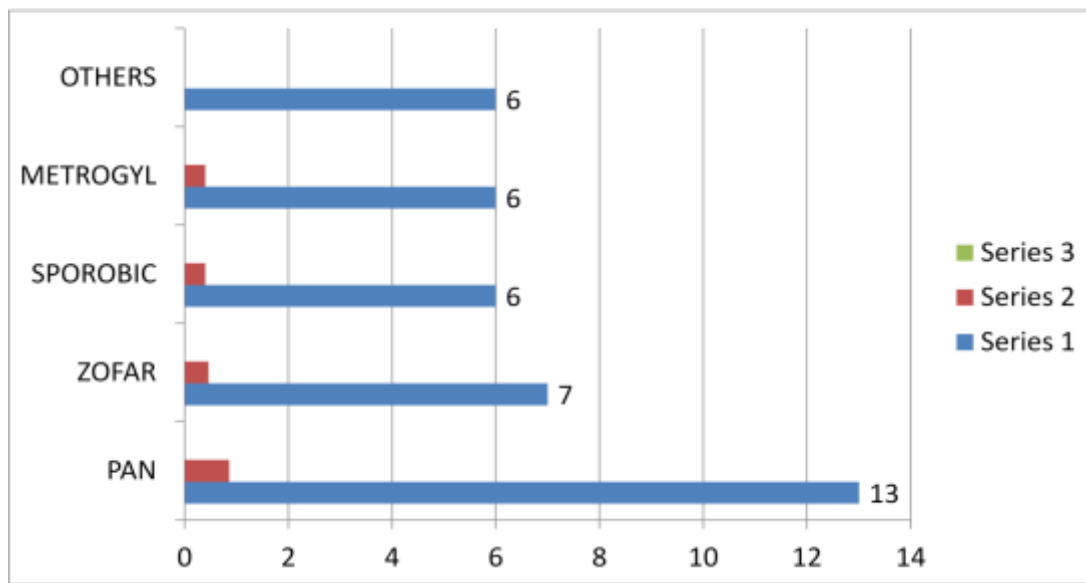- ThepatientwithpreviousGITsurgeries.
- Pregnantladies.
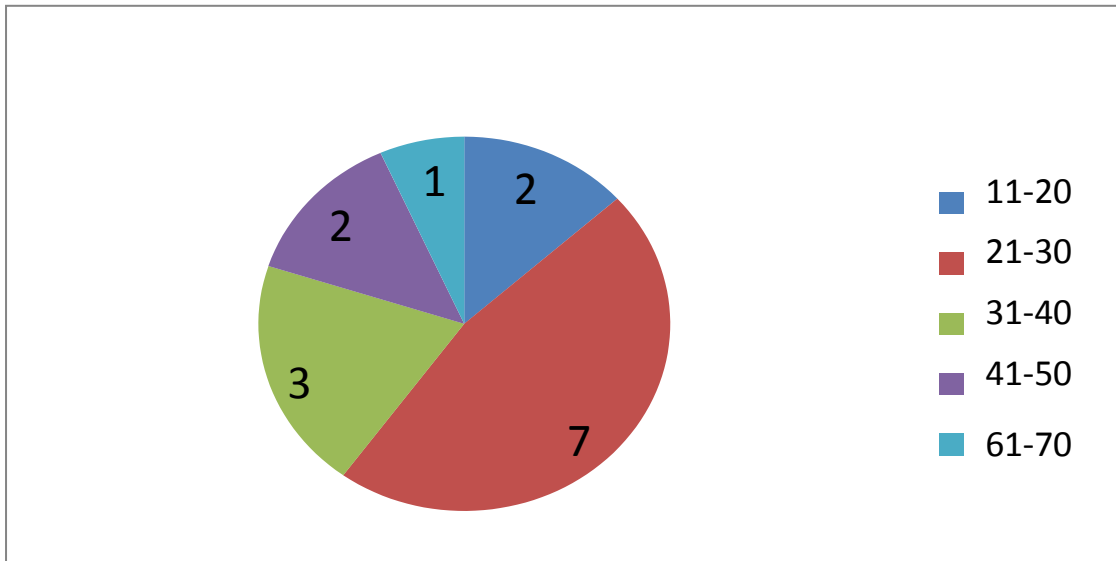
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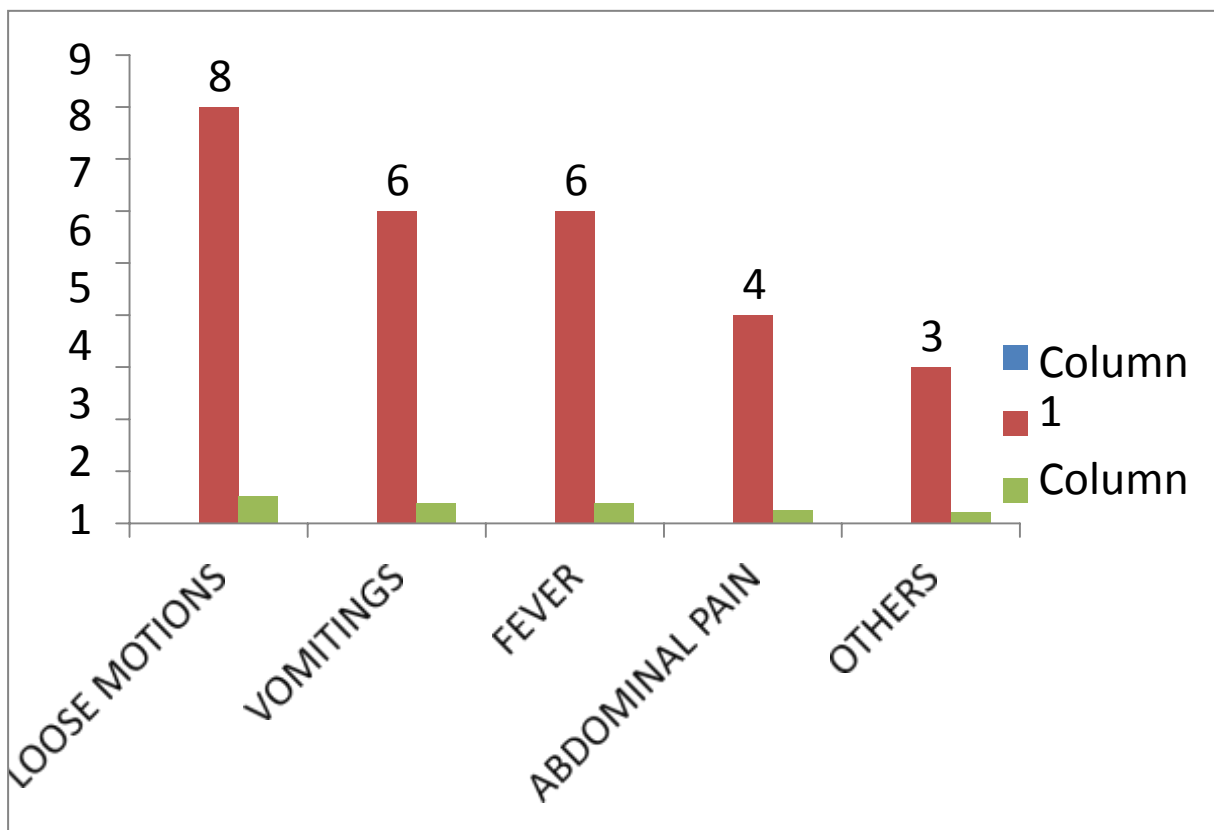**STUDYDESIGN:**Prospective study.

## III.    RESULTS





**AGE GAP**

**SYMPTOMS**



## IV.    DISCUSSION

People with different ages were affected with gastroenteritis, the median age of the study patient wasfound to be 35(11-70). In which features are 73% and 27% effected with gastroenteritis. The different agegroups such as 11-20(13%), 21-30(47%), 31-40(20%), 41-50(13%) and 61-70(16%) are affected. Thepatients have shown different symptoms like loose motions (53%), vomiting's (40%), fever(40%),abdominal

pain(26%) and also other symptoms like headache, palpitations (22%). Most commonly thepeople have suffered from loose motions, vomiting's. This is performed on adults the medications anddoses given aresamebasedontheircondition. Amongthesamplesizeconsidered,Pantoprazole (86%), zofer(40%), Ondansetron(40%), Metrogyl (40%), Other drugs (40%) includes Redofil,Taxmin, Ofloxacin, Rantac, etc.
The most commonly used drugs by almost all the patients are Pantoprazole and Zofer.There are few co-morbiditiesobservedlike hypothyrodisminveryfew cases.

## V. CONCLUSION

It is concluded that most of the patients effected with gastroenteritis have used pantoprazole and Zofer. Mostwidelytotreatincontrollingsymptoms likeloose motions andvomiting's.

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