ORIGINAL RESEARCH PAPER

Internal Medicine

DREADFUL AND DEVASTATING DIARRHOEA BY AEROMONAS SPECIES- A RARE CASE

KEY WORDS: Severe Diarrhoea, Aeromonas Species, Enteric Pathogen

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ABSTRACT

Aeromonas species are halophilic, Gram-negative rods which are inhabited in the soil, foodstuffs, and aquatic environment by forming biofilms and commonly encountered in contaminated drinking water, food products. They are known to cause various clinical manifestations in human like soft-tissue infections, muscle infections, septicaemia, skin diseases and enteric infections too. The role of aeromonads as enteric pathogen is still controversial. We report a case of 53 year old male patient, who presented to hospital with complaints of severe diarrhoea. Initially suspected as cholera and treated with large amounts of intravenous fluids and other supportive measures. Later workup revealed the causative organism as Aeromonas species. This present case of aeromonas illustrates about its rarity and dreadful nature of diarrhoea presentation like cholera.

INTRODUCTION

Aeromonas species are halophilic, Gram-negative rods which are inhabited in the soil, foodstuffs, and aquatic environment by forming biofilms and commonly encountered in contaminated drinking water, food products especially sea foods like fish, prawns etc. They are known to cause various clinical manifestations in human like soft-tissue infections, muscle infections, septicaemia, skin diseases and gastroenteritis. The role of aeromonads as enteric pathogen is still controversial. Few cases were reported in literature stating it as a causative organism for diarrhoea in food-borne, water-borne and nosocomial outbreaks in different countries.

Case Report

We report a case of 53 year old male patient, who is a known diabetic and hypertensive presented to emergency room of our institute with complaints of vomitings (9 episodes, watery and containing food particles) and loose stools (9-10 episodes, watery, non-bloody) associated with mild abdominal pain and giddiness since one day. Patient had a history of outside food intake (Fish curry) two days back. On examination, patient was found to be severely dehydrated, Blood pressure not recordable (SBP: ?80mmHg). Patient had continuous diarrhoea with a frequency of 1 episode every hour.

Patient was initiated on fluid therapy with alternate Normal Saline and RL of 1 litre per hour. Around 24 episodes of watery yellowish stools passed per day and he had persistent BP drop after each loose stool despite of adequate fluid support. Fluid therapy was continued at 1 litre per hour for 48 hours. After IV fluids BP and urine output were improved. But patient had persistent loose stools for 3 days.

Clinical symptoms and other parameters didn't improved for few days, despite of adequate intravenous fluids, electrolyte replacement, empirical antibiotics (metronidazole, doxycycline). All Initial investigations revealed metabolic acidosis, acute kidney injury and mild electrolyte derangement.

Stool for occult blood was positive. Hanging drop method for stool sample was found negative. Initially due to persistent watery diarrhoea noted in the patient, the cause of diarrhoea thought to be cholera. Initial Investigations revealed no cause and etiology of the diarrhoea remained unclear. Stool culture report came on fourth day was found positive for Aeromonas species as depicted in Figure 1 (sensitive to cefoperazone / sulbactum, meropenem etc.) and antibiotics continued accordingly. From Day 4, the frequency of loose stools decreased to 8 to 10 episodes per day and fluid correction reduced to 300ml per hour.

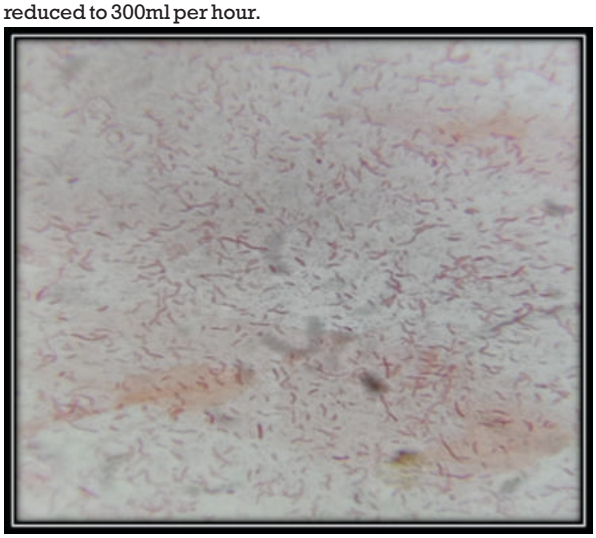

Figure 1: Microscopic Picture of Stool Culture Demonstrating Aeromonas Species

On Day 5, frequency of loose stools reduced to 3 episodes per day and IV fluids continued at 150ml/hour. Patient's symptoms completely subsided and clinical condition improved after 5 days of ICU stay with antibiotics, rehydration and other supportive measures and discharged on 8th day.

DISCUSSION

Aeromonas, a Gram-negative bacteria commonly resides in aquatic environment. They are isolated from various sources like water bodies, food products, aquatic animals and even

infectious processes of humans. Several species so far identified as emerging pathogens to cause wide range of human illness like wound infections, myositis, bacteraemia and gastroenteritis.[1,2]

Aeromanas species found to exhibit various virulence factors to adhere, invade and destroy host cells to affect host immune response. Literature search revealed the expression of genes like exoA, alt etc helps in encoding various toxins, structural components like flaA, maf-5 etc and secretion systems like T3SS, T6SS etc and cause for pathogenicity in a host.[3] But these factors are proven in animal studies than human context.

Many studies found the traces of Aeromonas in water supplies like surface, underground, potable, bottled, residual, seawater, and irrigation waters.[4] Many outbreaks of gastroenteritis are reported in past which are related to water bodies and Aeromonas species. Virulence factors like enterotoxins, cytotoxins, haemolysins and adhesins etc were identified as reason to cause enteric symptoms in some studies with significant association to cause watery diarrhoea.[5,6] But, role of Aeromonas as entero-pathogen was still controversial according to few studies. The present case may have relation with water bodies as only positive history noted was intake of fish curry.

The clinical manifestations in the patient showed multiple episodes of diarrhoea which are very difficult to manage even with enormous amounts of intravenous fluids and supportive measures. Initial line of work up given a doubt of cholera like illness as locality is an endemic area for cholera illness and due to clinical presentation perse. But hanging drop testing and other investigations found negative for species of vibrio cholerae. Final stool culture report found to be Aeromonas species.

Clinically the presentation of Aeromonads may mimic cholera. Many case reports are increasing every year notifying it as an outbreak in those areas identified to cause traveller's diarrhoea or similar to cholera illness. Few studies mentioned about the specific secretory immune response may coexist with diarrhoeal disease.[5,7]

CONCLUSION

Aeromonas species are universally resistant to the narrow-spectrum penicillin group of antibiotics and are susceptible to broad spectrum antibiotics. Usually, such infections are described earlier as mild, self-limiting and can be manageable by rehydration only. But the severe, dreadful and devastating diarrhoea is not uncommon. Aeromonads have to be kept as one of the differentials in mind while treating severe diarrhoea cases like cholera, clostridium and salmonella species. Here, the mainstay of treatment remains hydration. Cases with similar way of clinical presentation requires a high suspicion as "cholera" and patient has to treat with adequate or more than adequate hydration until remission of symptoms to save the life of patient.

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