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Aeromonas veronii biovar sobria gastoenteritis: a case report

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Abstract

Aeromonas veronii biovar sobria is associated with various infections in humans. Isolation of *Aeromonas sobria* in patients with gastroenteritis is not unusual. We describe a case of *Aeromonas veronii biovar sobria* gastroenteritis in a young patient. This is the first documented case reported from Pakistan.

Introduction

The genus Aeromonas include many species but the most common ones associated with human infections are *Aeromonas veronii, Aeromons hydrophila, Aeromonas jandaei, Aeromonas caviae and Aeromonas schubertii* [1]. The diseases caused by Aeromonas include gastroenteritis, ear and wound infections, cellulitis, urinary tract infections and septicemia [2]. We describe here a case of *Aeromonas veronii biovar sobria* gastroenteritis in a young patient. This is the first documented case reported from Pakistan. Involvement of *Aeromonas species* in diarrheal diseases and gastroenteritis has also been reported from other countries like Bangladesh, India, Finland and Japan [3-6]

Case report

A 21 years old man presented with one day history of loose watery stools, abdominal pain, vomiting and mild fever. There was no previous significant medical or surgical history. He reported consuming food and water from a local vendor prior to his illness. According to him, stools were watery in consistency up to 20 episodes per day. He also gave history of fever but it was not documented. The frequency of vomiting was 5-6 per day. On examination he was dehydrated and had coated tongue. His blood pressure was 90/50mmHg and his pulse rate was 88/minute. He was afebrile at that time. He was admitted in the hospital emergency unit. Initial thought was that he might be suffering from cholera. He was immediately rehydrated with Ringer's lactate infusion (20drops/minute), and was given injection gravinate and Injection hyoscine stat. After initial rehydration management, his blood and stool samples were collected for laboratory investigation. He was shifted to the medical ward and was started on Inj. Ciprofloxacin 200mg twice daily, infusion Metronidazole 500mg three times a day, injection Maxolon 10 mg three times a day. He was rehydrated with infusion Normal saline 1000ml once daily. He was advised to take orally Oral Rehydration salt (ORS). His blood complete picture and urine routine examination was unremarkable except mildly raised neutrophil count in blood (73%) (**Table 1,2,3**). On gross examination, his stool sample was of green in colour, with watery consistency with mucus flecks. On Gram's staining, gram negative rods were seen, with few epithelial cells. No pus cells were seen. Motility was performed by hanging drop method. Rapidly motile organisms were seen, resembling shooting star motility. The sample was inoculated on thiosulphate citrate bile salt sucrose agar (TCBS, Oxoid, UK), MacConkey's agar (Oxoid, UK), deoxycholate citrate agar (DCA, Oxoid UK) and blood agar (Oxoid, UK). The plates were incubated at 37^0C for 24 hours. After incubation, yellow sucrose fermenting colonies were seen on TCBS agar. There were non-lactose fermenting colonies on DCA and MacConkey's agar. There was clear hemolysis around the colonies on blood agar. The catalase and oxidase tests were performed, both were positive. It was first thought that the isolated organism was *Vibrio cholerae*. But to confirm the organism, API 20 E (Biomerieux) was used. Besides, esculin test and DNase test were also employed for the identification. After 24 hours of incubation, the organism identified was *Aeromonas veronii biovar sobria*, esculin test negative and DNase test positive. The organism was susceptible to ciprofloxacin, aztreonam, cefoperazone-sulbactam, piperacillin-tazobactam, gentamicin, amikacin and imipenem. It was resistant to tetracycline, cotrimoxazole and ampicillin. It was an unusual and uncommon organism isolated first time in our laboratory. The empirical treatment given to the patient was adequate, and the patient recovered.

Table1. Urine Report.

Marker	Value
Colour	Pale yellow
Specific gravity	1024
Reaction	Acidic
Proteins	Nil
Pus cells	3-4 WBCs/HPF
RBCs	Nil

Table 2. Stool Report.

Marker	Value
Consistency	Watery
Colour	Greenish
Reaction	Acidic
No blood or ova/cyst was seen	

Table 3. Blood Complete picture.

Marker	Value
Haemoglobin	15gm/dL
TLC	5.7
Total RBC	5.58
PCV	0.46
MCHC	34.7
MCH	28.5
Lymphocytes	22%
Neutrophils	73%
Eosinophils	3%
Monocytes	2%

Discussion

Infections due to *A. sobria* are not an unusual presentation in hospitals worldwide. It results is extra-intestinal and diarrheal infections in human, the strains are often originated from water [7, 8]. It frequently results in mild, self limited diarrheal illness, associated with nausea, vomiting and cramping abdominal pain. In this study, we have described the isolation of *A. sobria* for the first time in our laboratory. Various species of Aeromonas are associated with diarrhea, but *A. sobria* is most frequent species than the other species. In a study, Vila et al isolated *Aeromonas spp.* as the cause of traveler's diarrhea in 18 out of 863 patients. Among these 18 cases, nine were caused by *A. sobria* [2]. These findings agree with the results of Hänninen et al. [3], who reported that *A. sobria* were the most common *Aeromonas spp.* associated with traveler's diarrhea in tourists traveling to Morocco. Similarly, Yamada et al. [4] found that *A. veronii biotype sobria* was the *Aeromonas species* most frequently implicated as a cause of traveler's diarrhea in Japanese travelers returning from unindustrialized countries. Regional data from India showed that *A. sobria* was involved in 1.8% of patients with diarrhea [9]. In our study, watery stools, fever, and abdominal cramps were the most common symptoms, which is consistent with other reports [3, 10]. The *A. sobria* isolated in our study was resistant to ampicillin, tetracycline, and trimethoprim-sulfamethoxazole. A similar resistance pattern of *A. sobria* was also described in another study from Spain [2].

Conclusion

A. sobria is the *Aeromonas species* most frequently associated with watery diarrhea, fever, and abdominal cramps, sometimes mimicking the cholera infection. The persistence of symptoms makes the use of antimicrobial treatment necessary. Early clinical and laboratory measures should be taken for rapid diagnosis and prompt treatment.

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