Research Paper Medical Science

# Hospital Acquired *Elizabethkingia Meningoseptica* Bacteremia : A Rare Case Report in Immunocompromised Patient


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**ABSTRACT**

E. meningoseptica is a multidrug resistant organism that rarely causes meningitis and sepsis in neonates and adults. We report a case of hospital acquired E. meningoseptica bacteremia in a chronic alcoholic patient. He was successfully treated with combination of Meropenem and Sulbactam. To the best of our knowledge this is the one of the rare case report of hospital acquired bacteremia by E. meningoseptica in India.

**KEYWORDS** Elizabethkingia, Bacteremia, Opportunistic pathogen

**Introduction**

*Elizabethkingia meningoseptica* first reported by King in 1959 was previously known as *Flavobacterium meningosepticum* until1994, and *Chryseobacterium meningosepticum* until 2005 .It belongs to group 2A of centre for disease control and prevention(CDC) classification of previously unclassified bacteria [1,2,3]. It is glucose non fermenter ,nonmotile ,catalase and oxidase positive aerobic Gram negative bacilli found typically in plants ,soil and water sources including hospital environment [4].This ubiquitous bacillus is historically associated with meningitis and sepsis in premature neonates but rarely causes infection in immune-competent individuals .It causes meningitis in neonates with mortality rate of about 57%.[1]Infection in adult patients is generally hospital acquired .It has been also reported to cause endocarditis, eye infection, cellulitis, abdominal infection, epididymitis, bronchitis, sinusitis etc. Immunosuppression, underlying medical disease, prolonged hospital stay, prior use of higher antibiotics, indwelling catheter and other invasive devises are some of the risk factors associated with the acquisition of this infection [1].*E .meningoseptica* is an uncommon pathogen infrequently isolated from clinical specimens .Antimicrobial susceptibility data therefore is rather scarce regarding this rare pathogen .Moreover, result of susceptibility testing vary when different methods are used. CLSI has no recommendations for performance and interpretation of antimicrobial susceptibility tests for this rare pathogen .We report here rare case of bacteremia caused by *E. meningoseptica* in a chronic alcoholic patient.

**Case report**

A 42 yr old male patient was admitted in ICU with complaints of giddiness, headache, nausea; vomiting .He was known hypertensive and chronic alcoholic. On admission blood pressure was 210/110 mm of Hg. Patient suddenly became unresponsive with suspicion of intracranial bleeding. Multi-detector computed tomography (MDCT) brain was done and Rt. thalamo capsular bleed with intra-ventricular extension and midline shift was found. Treatment suggested was 'Decompression and extra ventricular drain' (EVD) insertion surgery. Bur- hole craniotomy with EVD insertion was done on the same day. Antibiotics ceftriaxone was started. Patient was afebrile for five days. Patient developed fever, 100 $^0$F on sixth day of procedure. Peripheral blood examination picture showed neutrophilic leucocytosis with hyper segmented neutrophils. Patient was on ventilator support with prolonged oral intubation. Tracheostomy was done .

ETT secretion was received in micro biology lab for culture sensitivity. *Acinetobacter spp* was grown, which was sensitive to Imipenem, Gentamicin, Ciprofloxacin, Co-trimoxazole, Polymyxin-B, and Colistin. As patient had fever spikes blood culture was done. Blood culture sample was processed by the automated and computerized blood culture system. (BACTEC BD).Growth was detected after 48 hrs. On MacConkeys agar there was no growth. Pale yellow coloured colonies were grown on blood agar. Isolate was Catalase and oxidase positive, non-motile Gram negative bacilli .The identification and sensitivity was performed by Vitek 2 automated system (Biomerieux) using the cards CNN 1 and AST –NO90 resp. The isolate was identified as *Elizabethkingia meningoseptica* and was sensitive to, ciprofloxacin, moxifloxacin and tigeycycline, and resistant to ampicillin, ampi/salbutam, cefazolin, ceftriaxone, cefepime, aztreonam, piperacillin/tazobactum, Imipenem, amikacin, gentamicin and tobramycin.

As patient continued to be febrile, based on blood culture report injection ceftriaxone was discontinued and piperacillin / tazobactam was started for two days. As patient didn't respond to it, inj. Meropenem/sulbactam was started . Patient responded to Meropenem/sulbactam, became afebrile and shifted to ward.

**Discussion**

*E .meningoseptica* is an infrequent organism causing meningitis in premature and new-born infants .In adults it has been isolated from cases of pneumonia, endocarditis, and meningitis usually in association with some underlying severe illness [1, 4].There were few reports of isolation of this organism from cases of renal failure, endocarditis and meningitis [5, 6, 7].This is a rare case report of bacteraemia caused by *E.meningoseptic*a

in alcoholic patient.

In hospital ICU patients are critically ill and are on multiple life supporting devices. Moreover this bacterium proliferates in the hospital environment growing on moist surfaces such as sinks, water tanks, ventilator tubing ,saline solutions used for flushing devices etc.

Our isolate was resistant to ampicillin, ampi/salbutam, cefazolin, ceftriaxone, cefepime, aztreonam, piperacillin/tazobactum, Imipenem, amikacin, gentamicin and tobramycin and was sensitive to, ciprofloxacin, Moxifloxacin and tigeycycline. Similar sensitivity pattern was reported by Smita sarma et al. [5]

*E. meningoseptica* is resistant to most antibiotics, and the use of inappropriate drugs as empirical therapy may contribute to the poor outcome in many infections .Results of susceptibility testing vary when different methods are used; disk diffusion methods appear to be especially unreliable so broth microdilution should be employed .Due to the production of two beta lactamases, one ESBL and one class B carbapenem-hydrolyzing metallolactamase, many *E. meningoseptica* strains are usually resistant to extended-spectrum beta-lactam agents including carbapenems and aztreonam .In addition, the organism is resistant to aminoglycosides, chloramphenicol and erythromycin, while in vitro, however fluoroquinolones have been reported to be active. [4, 8, 9]

In future there is possibility of encountering increased number of infections due to this opportunistic pathogens particularly in Intensive care units where there is selective antibiotic pressure due to higher antibiotic use and presence of susceptible critically ill patients on multiple life support devices .Thus high degree of suspicion ,rapid diagnosis and prompt institution of

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