

Multidrug-resistant *Acinetobacter* meningitis treated by intrathecal colistin

Sir,

We describe a case of iatrogenic *Acinetobacter iwoffii* multidrug-resistant meningitis who responded to intrathecal colistin.

A 50-year-old hypertensive woman following right thalamic hemorrhage with intraventricular extension [Figure 1] underwent external ventricular drainage (EVD) on 5th day of illness because of hydrocephalus. In next 4 days, she developed fever and the EVD was removed on 16th day of illness. She was referred for persistent fever and deteriorating consciousness. On admission, she was comatose with neck stiffness and hemiparesis. Her hemoglobin was 8.9 g/dl, white cell count 8000/mm³, with 80% polymorphs, erythrocyte sedimentation rate 82 mm at 1st h; blood sugar, serum creatinine, blood and urine cultures were normal. Cerebrospinal fluid (CSF) revealed 209 mg/dl protein, 100 cells/mm³ with neutrophil 10%, lymphocyte 90%, glucose 36 mg/dl, and Gram-negative bacilli. She was prescribed injection cefepime 2 g 8 hourly and vancomycin 500 mg BD. CSF culture revealed *A. iwoffii* sensitive to colistin (minimum inhibitory concentration [MIC] <1 µg/ml) and cefoperazone-sulbactam only. She was prescribed cefoperazone-sulbactam and vancomycin, but fever persisted. Repeat CSF on 35th day of illness revealed 200 mg/dl protein and 100/mm³ cells with neutrophil 10%, lymphocyte 90%, and sugar 21 (blood sugar 149) mg/dl. CSF smear did not reveal bacteria but grew *A. iwoffii* sensitive to colistin only. Colistin 8 mg intrathecal and 72 mg intravenous (IV) was given. Dose of colistin was increased to 16 mg from 12th day and continued for 17 days. She became afebrile after 4 days of colistin. CSF culture on 12th and 17th day of colistin was sterile, so she was discharged and remained well at 1-month follow-up.

Acinetobacter infection is a rare cause of community-acquired meningitis in children but is increasingly recognized as the nosocomial infection. Alarming, the isolates of *Acinetobacter* are resistant to most or even all commercially available antibiotics. *Acinetobacter* meningitis is common after neurosurgery, head and face injury, EVD, and shunt surgery. For neurosurgery-related meningitis, Infectious Diseases Society of America (IDSA) recommends vancomycin with ceftazidime/cefepime or

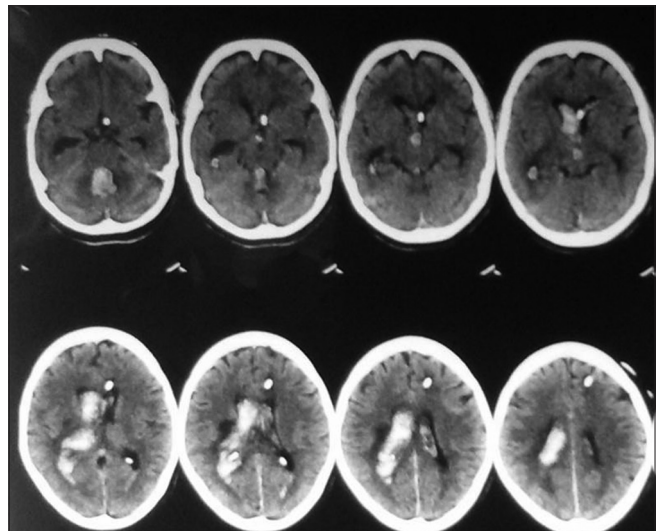


Figure 1: Noncontrast computed tomography of the brain showing right thalamic bleed with intraventricular extension and external ventricular drain

meropenem. These guidelines are inadequate for *Acinetobacter* meningitis, especially because of increasing resistance. Out of 2000 isolates of *Acinetobacter* worldwide, the sensitivity to cefepime was 47.7% and ceftazidime 44.6%.^[1] In another study, *Acinetobacter* isolates meropenem MIC of 0.25 µg/mL or lower was found in 27%–28% isolates only.^[2] In most nosocomial meningitis, there may be mild alteration in blood–brain barrier thereby reducing entry of antibiotics into the CSF. Intrathecal or intraventricular colistin in *Acinetobacter* meningitis was successful in 10 of 11 episodes.^[3] Thirty-four patients with nosocomial *Acinetobacter* meningitis^[4] and 18 patients with multidrug-resistant ventriculomeningitis have been treated with intrathecal and intraventricular colistin, respectively.^[5] IDSA recommends intrathecal colistin 5 mg in adults and 2 mg in children for 3 weeks.^[6] The duration of therapy is decided by three negative cultures on separate days. CSF should be repeated after 4 days of IV therapy. The median duration of therapy needed to sterilize CSF is 3 days.^[7] If CSF is still growing *Acinetobacter*, the therapy should be changed and CSF repeated after 4 days. This patient highlights the concern of *Acinetobacter* meningitis after EVD and responses to intrathecal colistin combined therapy.

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Conflicts of interest

There are no conflicts of interest.

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