

## A Pregnant Woman with *Lactococcus lactis* Meningitis: To Treat or Not to Treat?

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Received: 20 December 2011 / Accepted: 14 June 2012 / Published online: 27 September 2012  
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### Introduction

*Lactococcus lactis* is generally considered a pathogen of lesser significance and usually treated only when isolated in cases like bacterial endocarditis [1, 2]. Due to their low pathogenicity and infrequent isolation in immune-competent persons, it is often disregarded by clinicians especially from the therapeutic stand point. This poses an important question—should we treat the infection or disregard it as a harmless pathogen?

### Case Report

A pregnant woman at her 5th month of gestation presented to our emergency department with a history of altered sensorium of 1 day. She had a history of intermittent, moderate-grade fever 10 days prior with associated headache. She was febrile and disoriented with a GCS of 13/15 (E3, V4, M6). There were no cranial nerve, motor, or sensory deficits, except for exaggerated deep tendon

reflexes and bilateral extensor plantar response. Kernig's and Brudzinski's signs were positive. There was no papilledema on optic fundus examination. Complete blood count showed a high total leukocyte count (19,100/cumm) with normal hemoglobin and platelet counts. MRI of the brain was performed immediately, which showed meningeal enhancement. There were no focal lesions or signs of raised intracranial pressure. CSF analysis showed increased opening pressure (25 mmHg), low sugar (5 gm/dL) with a simultaneous blood sugar of 103 mg/dL, elevated proteins (56 mg/dL), a cell count of 360 with 60 % lymphocytes and 40 % neutrophils, and ADA of 1 U/L. CSF and blood samples were sent for bacteriological cultures. The patient was started empirically on ceftriaxone, 2 g intravenously 12th hourly. Blood cultures were sterile, while CSF culture grew Gram-positive cocci that were identified as *Lactococcus lactis* (mini API) after 5 days of incubation. The isolate was susceptible to ampicillin, chloramphenicol, erythromycin, cotrimoxazole, and gentamicin. Due to rarity of the isolate, low pathogenic potential, and commensal status, it was disregarded as a contaminant. In spite of 9 days of antimicrobial therapy, she did not show any clinical improvement. In view of persistent meningeal signs, CSF analysis was repeated, which showed a cell count of 140 with 80 % lymphocytes and 20 % neutrophils with low sugars (10 mg/dL). CSF culture sequentially grew *Lactococcus lactis*. Persistence of this organism in the CSF prompted us to re-evaluate the significance of the isolate. At this stage, ampicillin was added to the previous regimen at a dosage of 1 gm intravenously 4th hourly for a total of

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14 days. She showed clinical improvement after 2–3 days of addition of ampicillin. Her stay in hospital was later unremarkable, and she was discharged with total recovery. She attended follow-up clinics regularly and delivered a full-term healthy baby.

## Discussion

*Lactococcus lactis* is a gram-positive coccus, often misidentified as *Streptococcus* or *Enterococcus*. It is rarely pathogenic in the immunocompetent and is a commensal present at mucocutaneous surfaces. It is commercially used for production of fermented dairy products such as yogurt or cheese and as probiotics [2]. Though considered previously as nonpathogenic, there are emerging instances of clinically significant infections among the immunocompetent. For instance, seven cases of bacterial endocarditis and one case each of ascending cholangitis [2, 3] have been reported.

In our patient, we disregarded the first CSF culture report. Persistence of meningeal signs in spite of ceftriaxone therapy of 9 days and repeated isolation of *Lactococcus lactis* from CSF prompted us to consider the isolate as

significant and add ampicillin to the therapeutic regimen. The addition of ampicillin hastened the recovery. There was no history of exposure to unpasteurised milk, which is a known risk factor in both the immunocompetent and immunocompromised [3]. We were unable to determine the source of infection here.

To conclude, we emphasize that the isolation of a rare organism with a lower pathogenic potential in pregnancy warrants detailed clinico-microbiological attention and appropriate antimicrobial therapy to avoid further undue complications.

**Conflict of interest** Authors declare no conflict of interest.

## References

1. Aguirre M, Collins MD. Lactic acid bacteria and human clinical infection. *J Appl Bacteriol.* 1993;75:95–107.
2. Wood HF, Jacobs K, McCarty M. *Streptococcus lactis* isolated from a patient with subacute bacterial endocarditis. *Am J Med.* 1955;18:345–7.
3. Davies J, Burkitt MD, Watson A. Ascending cholangitis presenting with *Lactococcus lactis cremoris* bacteraemia: a case report. *J Med Case Rep.* 2009;3:3.