Sir,

In their interesting study, Mehta et al. stated that cerebrospinal fluid (CSF) cortisol levels were significantly higher in the bacterial meningitis (BM) group as compared to the viral meningitis (VM) group. The authors suggested that CSF cortisol may serve as a valuable, rapid, and relatively inexpensive diagnostic marker in discriminating between BM and VM and it can be a useful guide to monitor the response to therapy in BM.[1] I presume that the clinical implication of that suggestion is questionable. This is based on the following three points.

First, the cutoff values of CSF cortisol were not established to be practically implementable in the clinical setting.

Second, lumbar puncture (LP) is a procedure frequently performed in medical practice. Though LP is a safe procedure in experienced hands, families fear having it performed on patients, particularly sick children and refusing to have LP performed is not uncommon. The fear of paralysis and conviction that LP was unnecessary accounted for the majority of the causes for refusal to perform LP.[2] Therefore, it would not be easy to repeatedly take the consent of families for the performance of LP to monitor CSF cortisol response in the therapy on BM.

Third, the use of biological markers including procalcitonin (PCT) and C-reactive protein (CRP) has been proposed to facilitate the accuracy of the initial diagnosis of bacterial infections including meningitis. It is well-known that PCT is an acute-phase protein with faster kinetics than CRP and its concentration in serum rises within a few hours following the inception of a bacterial infection. I presume that serum PCT could be considered as a valuable, practical, and better alternative tool in the clinical setting than CSF cortisol for both diagnostic and prognostic purposes in managing cases of meningitis. This is based on the following three points:

1. It has been recently found that at an optimum cutoff value of ≥5,000 pg/mL, based on the area under receiver operating characteristic (ROC) curve, PCT showed a sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of 98.5%, 93.5%, 98.6%, and 93.3%, respectively. Serum PCT with cutoff level of 15,000 pg/mL showed a sensitivity, specificity, PPV, and NPV of 92%, 67%, 91.4%, and 71.4%, respectively, for the differentiation of BM from VM.[3]

2. Serum PCT level has been noticed to decrease rapidly with appropriate antibiotic treatment and hence, diminishing the value of repeating LP after admission to assess treatment efficacy.[4]

3. Most recently, serum PCT level has been seen to be related to the severity of disease in patients with BM as PCT levels decreased significantly in patients who had good curative effect, whereas PCT levels did not change in patients who had no curative effect. The levels of PCT were found to be significantly higher in those who died than in those who survived.[5]

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Conflicts of interest
There are no conflicts of interest.

Mahmood Dhahir Al-Mendalawi
Department of Paediatrics, Al-Kindy College of Medicine, Baghdad University, Baghdad, Iraq

Address for correspondence:
Prof. Mahmood Dhahir Al-Mendalawi, PO Box - 55302, Baghdad Post Office, Baghdad, Iraq.
E-mail: mdalmendalawi@yahoo.com

References
1. Mehta A, Mahale RR, Sudhir U, Javali M, Srinivasa R. Utility of cerebrospinal fluid cortisol level in acute bacterial meningitis. Ann Indian Acad Neurol 2015;18:210-4.
2. Narchi H, Ghatasheh G, Al Hassani N, Al Reyami L, Khan Q. Why do some parents refuse consent for lumbar puncture on their child? A qualitative study. Hosp Pediatr 2012;2:93-8.
3. Prasad R, Kapoor R, Mishra OP, Srivastava R, Kant Singh U. Serum procalcitonin in septic meningitis. Indian J Pediatr 2013;80:365-70.
4. Viallon A, Guymar c'h P, Guymar c'h S, Tardy B, Robert F, Marjollet O, et al. Decrease in serum procalcitonin levels over time during treatment of acute bacterial meningitis. Crit Care 2005;9:R344-50.
5. Hu R, Gong Y, Wang Y. Relationship of serum procalcitonin levels to severity and prognosis in pediatric bacterial meningitis. Clin Pediatr (Phila) 2015;54:1141-4.
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