

Commentary

Identification of causative agent with estimation of cerebrospinal fluid (CSF) glucose, protein, cells is necessary for accurate diagnosis of meningitis. Unfortunately, these facilities are not available in rural areas or having lack of experienced microscopist and laboratory support. Moreover the positivity rate of gram staining and cultures remain low between 25-40% in this part of the world.^[1] Given the limitations and non-availability of culture methods, many of the treating physicians have to rely upon the clinical assessment and results of the biochemical and cell analysis of the CSF for making the diagnosis of meningitis and classifying its subtypes. In Past reagent strips that measure glucose and protein in blood and urine have been used to serve this task, but with varying results. Urine reagent strips may help as a complimentary method for guiding the physicians in deciding an optimal management till the conventional results is available. Testing CSF for granulocytes and protein with urine reagent strips is a bedside-method which allows a rapid and reliable decision whether CSF is normal or granulocytic pleocytosis. Few studies had shown overall sensitivity and specificity of about 97.14% and 96.42% respectively.^[1] The sensitivity, specificity for tuberculous meningitis and bacterial meningitis were reported as 100%, and 96.55%; that for aseptic meningitis as 70% and 96.55%. Accuracy for the diagnosis of meningitis as a whole, bacterial meningitis, tuberculous meningitis, and aseptic meningitis were reported as 96.78%, 98.2%, 98.27% and 83.0% respectively.^[1,2] In this article by Joshi D, authors has defined different index test

like CSF leukocytes, proteins and glucose using urinary reagent strip and evaluated its utility and efficacy in the diagnosis of meningitis henceforth predicted that urinary reagent strips can reliably detect raised CSF protein (>100 mg/dl), decreased glucose (<40 mg/dl) and increased neutrophil count (>10/cumm).^[3] This study also predicted Leukocyte esterase positivity by test strip had a sensitivity of 85.2% and specificity of 89.6% for detection of CSF granulocytes of more than 10 per cu-mm. While protein reagent strip positivity had a high sensitivity of 98% for detection of CSF proteins greater than 30 mg/dL but the specificity was low 57.1% due to a higher proportion of false positives detected with the strip test which was lower than previous study.^[3-5] These urinary reagents strips can distinguish normal from infected CSF and are of value in the diagnosis of meningitis with very good sensitivity and specificity. Hence, these strips can be of value to clinicians working in resource-constrained settings to reliably make a rapid diagnosis of meningitis and initiate appropriate treatment.

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References

1. Parmar RC, Warke S, Sira P, Kamat JR. Rapid diagnosis of meningitis using reagent strips. *Indian J Med Sci* 2004;58:62-6.
2. Heckmann JG, Engelhardt A, Druschky A, Muck-Weymann M, Neundorfer B. Urine test strips for cerebrospinal fluid diagnosis of bacterial meningitis. *Med Klin (Munich)* 1996;91:766-8.
3. Joshi D, Kundana K, Puranik A, Joshi R. Diagnostic accuracy of urinary reagent strip to determine cerebrospinal fluid chemistry and cellularity. *J Neurosci Rural Pract* 2013;4:140-5.
4. Moosa AA, Quortum HA, Ibrahim MD. Rapid diagnosis of bacterial

- meningitis with reagent strips. *Lancet* 1995;345:1290-1.
5. Romanelli RM, Thome EE, Duarte FM, Gomes RS, Camargos PA, Freire HB. Diagnosis of meningitis with reagent strips. *J Pediatr (Rio J)* 2001;77:203-8.

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