Estimation of cerebrospinal fluid cortisol level in tuberculous meningitis

Sir,

Mahale et al. addressed in their interesting study that the mean cerebrospinal fluid (CSF) cortisol level in tuberculous meningitis (TBM) patients was significantly higher as compared to aseptic meningitis patients and control subjects ($P < 0.0001$).[1] Accordingly, the authors suggested that CSF cortisol level estimation could be considered as a rapid, relatively inexpensive diagnostic marker in the early identification of TBM along with CSF findings of elevated proteins, hypoglycorrachia, and lymphocytic pleocytosis.[1] I presume that the clinical implication of that suggestion is questionable. This is based on the following two points.

First, the cut-off values of CSF cortisol were not established to be practically implementable in the Indian clinical setting.

Second, the use of biological markers, including adenosine deaminase (ADA) has been suggested to enhance the accuracy of the initial diagnosis of various infections, including meningitis. As a better alternative to CSF cortisol, I presume that CSF-ADA measurement could be considered as a simple, useful, and rapid diagnostic tool for the early recognition of TBM and evaluating anti-TB therapy in TBM patients in India. This is based on the following three points. (1) The accuracy of CSF-ADA has been recently studied in Indian TBM and non-TBM patients. The results indicated that CSF-ADA of 10 U/L as a cut-off value had 87.5% sensitivity and 83.3% specificity whereas the positive predictive value of the test was 87.5% and 83.3% negative predictive value. The study concluded that CSF-ADA estimation is not only simple, inexpensive, and rapid but also a fairly specific method for making a diagnosis of TBM, especially when there is a dilemma of differentiating TBM from non-tuberculous etiology.[2] (2) Comparing ADA levels and polymerase chain reaction (PCR) in CSF has revealed that CSF-ADA is a more sensitive indicator than PCR for the diagnosis of TBM in an Indian cohort with suspected TBM. Using a cut-off level of $>10$ U/L, CSF-ADA had the sensitivity of 92.5% and specificity of 97% for the diagnosis of TBM whereas PCR for TBM had a sensitivity of 44.5% and specificity 92% in the most likely TBM cases.[3] (3) Most recently, it has been found that even in low TB endemic areas, CSF-ADA measurement can be still used to early diagnose TBM. The best ADA cut-off in low TB endemic areas has been estimated to be 11.5 IU/L with 91% sensitivity and 77.7% specificity. If CSF-ADA ($>11.5$ IU/L) estimation is combined with CSF glucose level ($<65$ mg/dL) and leukocytes ($\geq 13.5$ cell/mm$^3$), the sensitivity and specificity will skip to 91% and 88%, respectively.[4]

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Conflicts of interest
There are no conflicts of interest.

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Sir,

Scholarly peer reviewers get limited recognition for performing, perhaps, the most important and time-tested quality control mechanism that we have today in the world of scientific publishing. An average peer reviewer may review several manuscripts a year depending on their repute and stand in the field. Hence, a considerable amount of time is spent in doing this critical activity with little tangible benefits to the peer reviewer apart from a sense of altruistic satisfaction for having contributed to scientific discourse.

With increasing emphasis on publications for career advancement and placements, naturally the requests to peer review articles have also shown a concurrent rise. This, often results in scientists actually turning down more requests for peer reviews that they accept due to a paucity of resources.

It is quite plausible that many of them may not be willing to review at all for new or low impact factor journals or do a very superficial job of reviewing for these journals but jump at the opportunity to review for reputed journals and carry out a more elaborate and rigorous intellectual review. This is an undesirable scenario and hampers the progress of journals apart from serving to maintain the wide disparity in standards of publishing. In this scenario, appropriate credit and visibility are required to improve and motivate peer review activity.

Recently, several networking sites such as Publons, PubPeer, and Faculty of 1000 have been launched with the aim of providing platforms to showcase one’s reviews as scientific output and enhance its visibility. Some of them such as Publons go one step further and issue digital object identifiers for reviews rendering them citable and also allows one to record and verify the peer review output based on which reviewer scores are assigned. This can subsequently be mentioned when applying for research grants, faculty, or editorial positions. These initiatives are much needed to increase transparency, accountability, and credit for the peer reviewing process. In a way, it would also reduce an important shortcoming of the peer review process – The abuse of peer review as pointed out by Smith, by making the review open to scrutiny.

It is plausible that the ideas and insights provided by a reviewer of a scientific manuscript may serve to catalyze further and better-designed work in the area but all too often, the closed peer review process employed by major journals ensures that the reviewer comments never reach the larger academic community. Considering these potential benefits, the academia must take steps to acknowledge and reward the work of peer reviewers and provide better visibility to their contributions that will, doubtless, help in improving quality of reviews, researcher cross-talk, dissemination of ideas, and ultimately, faster advancement of science.

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References