To the Editor:

Dr. Sahoo's letter raises two interesting objections to the determination of pleural adenosine deaminase (PADA) for diagnosis of tuberculous pleurisy. First, he believes that the significance of this parameter is questionable in view of the wide range of diagnostic cutoff points used in the various studies that have supported the use of PADA (25 to 50 U/L). Second, he points out that there have been reports of high PADA levels being an insufficiently specific criterion for diagnosis of tuberculous pleurisy.

Evaluation of the first criticism requires consideration of the possible sources of the variation in cutoff points. It seems improbable that the source suggested by Dr. Sahoo, differences in instrumental method (colorimetry vs spectrophotometry), can contribute greatly to the observed variation; colorimetry and spectrophotometry are both well-standardized procedures based on the Beer-Lambert law, the only essential difference between them being the monochrometer used to provide radiation of the working wavelength. A much more likely technical source of discrepancy would seem to be differences in regard to which of the chemical species involved in the adenosine deaminase reaction is measured for the purposes of ADA determination (adenosine, inosine or—in our laboratory—ammonium ions); such differences might well affect within-run and between-run precision and accuracy in each laboratory, and hence interlaboratory homogeneity. More importantly, however, there are two quite obvious sources of discrepancy that have nothing to do with analytical technique: the characteristics of the populations studied in each case and the criterion used to establish the cutoff point.

Of the four cutoffs mentioned by Dr. Sahoo in addition to our own (47 U/L) (Chest 1993; 103:458-65), two are, in fact, quite close to ours (45 U/L and 50 U/L), while the other two are much further removed (25 U/L and 30 U/L). Two comments may be made concerning the value of 25 U/L, attributed by Dr. Sahoo to Piras et al. The first is simply that this value seems to be a mis-understanding on Dr. Sahoo's part, since the relevant figure in the article by Piras et al appears to show a higher cutoff. The second shows the point made at the end of the previous paragraph: Piras et al appear to have taken as their cutoff the highest PADA value among the nontuberculous pleurisy cases they considered—a criterion differing from ours. We cannot offer an opinion on the cutoff of 30 U/L by Prasad et al because we have, unfortunately, been unable to obtain a copy of their paper before writing this reply.

With regard to Dr. Sahoo's second criticism, concerning the performance of PADA as a diagnostic parameter, we refer the reader to the meta-analytic study of the value of PADA for diagnosis of tuberculous pleurisy by Ene et al. Ene et al reviewed all the relevant publications included in the Index Medicus since 1980 which fulfilled the following conditions: the patient series studied were to consist of more than one case, were to be composed exclusively of pleurisy cases with no restrictions on etiology, and were not to include series published elsewhere. These conditions were fulfilled by seven studies, including the Van Keimpema et al study. The Ene et al conclusion was that, when used appropriately, the sensitivity of PADA for tuberculous pleurisy is 99 percent and its specificity 93 percent, values that are very similar to those found in our own work (Chest 1993; 103:658-65).

We remain convinced that PADA is a useful parameter for diagnosis of tuberculous pleurisy when properly used. For the reasons discussed above, proper use includes the establishment by each center of its own cutoff value after accepted criteria.

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REFERENCES

1 Van Keimpema AR, Slatts EH, Wagenaar JP. Adenosine deaminase activity not diagnostic for tuberculous pleurisy. Eur J Respir Dis 1987; 71:15-18
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