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**Need the Small Laboratory Still Use the Plasma Creatine Kinase/Aspartate Aminotransferase Ratio?**

**To the Editor:**

Garcia-Webb et al. (1) reported on the plasma total CK/ASAT ratio and its application during diagnosis of an acute myocardial infarction (AMI). This Letter deserves some comment, because the authors recommend use of this ratio particularly in the small laboratory where "facilities for CK-MB isoenzyme measurement may not be present." We believe that the experience gained by using this ratio during the last several years should be mentioned before a recommendation is given and before new and perhaps ineffective discussions and re-examinations in this field are started once again.

In 1971, when CK-MB determinations were not yet available, Szaas et al. (2,3) introduced the CK/ASAT ratio to improve diagnostic specificity of the total CK determination during diagnosis of AMI. In their original paper they set the discriminator for the differential diagnosis of AMI and skeletal muscle disease at 9, and even then they warned of undiscriminating use and interpretation of their ratio. With any other ratio, the Szaas ratio also is subject to methodological alterations; after introduction of the so-called optimized standard methods for CK and ASAT, the discriminator had to be reset at 11 (4-6). In their comprehensive review on the diagnostic significance of the Szaas ratio, Schmidt et al. (6) discuss in detail its pathophysiological principles, its advantages and limitations, and report the results obtained for more than 300 patients' sera.

In recent years, however, the specificity and sensitivity of diagnosis of AMI have been remarkably improved by measuring the serum activity of the MB isoenzyme of CK. Especially, the immunoinhibitory methods (7-11) for CK-MB allow a timely diagnosis, which additionally is cost-effective and not labor-intensive. Therefore they are well suited for the small laboratory, if it is prepared to measure enzyme activities in serum by continuously monitoring the reaction at 334 or 340 nm. Consequently, even small laboratories may determine CK-MB reliably today, with facilitated clinical chemical diagnosis of AMI, even in those patients with a less-pronounced increase of total CK activity or with an increased ASAT activity in their serum that originates from liver, erythrocytes, or platelets.

References

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**RIA of Cyclosporin in Whole Blood:**

**Sample Preparation That Ensures Lysis**

**To the Editor:**

Our laboratory measures cyclosporin in whole blood by a modification of the RIA method with a tritiated tracer (Sandoz), involving a second antibody separation (unpublished). Lysed whole blood (by freeze/thaw cycle or sonication) is recommended for use in this assay, but nonlysed blood can be used if it is thoroughly mixed before sampling.

We find, however, that a single freeze/thaw cycle (overnight or longer at -20 °C in a freezer) does not always completely lyse the cells. Some samples do not freeze, possibly owing to supercooling, and these samples are visibly not lysed at all. This problem, and the need for assay of samples immediately upon receipt, prohibits the efficient use of automated equipment for dilution/pipetting, because the erythrocytes in the specimens settle during the variable interval while the tubes are standing in racks awaiting sampling, which may lead to erroneous results when nonrepresentative aliquots of the specimen are taken.

We tried using hemolyzing agents to overcome this problem and found saponin to be suitable: 20 μL of a 200 g/L solution of saponin is added to the plastic sampling tubes and allowed to dry overnight. About 500 μL of thoroughly mixed whole blood is added to the tube, and the samples are mixed and allowed to lyse for about 15 min, then mixed again before automatic sampling.

Comparison of results for split specimens (pre-dose EDTA-anticoagulated whole blood from cyclosporin-treated patients with a bone-marrow, renal, or liver transplant) lysed by the freeze/thaw cycle (x) and by the saponin method (y) correlated well when measured against standards containing no saponin, with a regression equation for