be related to tumor mass. AST is an index of liver-cell damage, which is an uncommon finding in metastatic liver disease.

Our findings suggest that serum LDH assay is useful in selected patients, in whom other causes of an increased LDH can be excluded, in determining the extent of metastatic liver disease.

References

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Cupric Acetate-Phosphoric Acid Staining Inadequately Reflects the Lecithin/Sphingomyelin Ratio

To the Editor:

Pappas et al. (1) described a method of improving one-dimensional thin-layer chromatography of phospholipids in amniotic fluid. Although they obtained a good separation of the various phospholipids, their lecithin/sphingomyelin (L/S) ratio, based on staining with cupric acetate/phosphoric acid, seems to be less valuable.

When I used the same staining technique to estimate the percent phospholipid composition of fluid obtained by lavage of rat lung, I obtained an L/S ratio of 6.7, whereas the L/S ratio was 50.6 on the basis of the phosphorus content of the lecithin and sphingomyelin spots. The low densitometric L/S value is the result of at least two factors: an overload of phospholipid at the lecithin spot, and the high percentage of saturated lecithins. In comparing the staining ability of equal amounts of egg lecithin and dipalmitoyllecithin (DPL), the DPL was hardly visible after heating the thin-layer chromatogram on a hot plate (230 °C) for 5 min; after 15 min, the DPL staining intensity was still only 20% of that of egg lecithin. Prolonged heating periods are ineffective because the background darkens.

The gestational age-dependent increase in total phospholipids of amniotic fluid is mainly the consequence of the influx of phospholipids derived from the maturing fetal lungs. Disaturated lecithin, the most important component of these lung phospholipids, is strongly underestimated by the method of Pappas et al. Their method affects the predictive value of the L/S ratio, and the resulting underestimation is most likely responsible for the slow increase of their L/S ratios with gestational age. This is in strong contrast with the findings of Gluck et al. (2) and many other authors, who noticed a steep increase of the L/S ratio after the 35th week of gestation. Differences in staining procedures will produce different densitometric findings (3). Furthermore, one should be aware of differences in stainability of the various phospholipids, because that part of the L/S method is at least as important as the separation of the individual phospholipids. Although none of the staining methods is perfect, I prefer the procedure of Verhoeven and Merkus (4), because the resulting color intensities of the DPL and egg lecithin spots are almost the same.

References

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