Letters to the Editor should be typed double-spaced (including references) with conventional margins. The overall length is limited to five manuscript pages, including not more than one figure or one table.

Fluorescence Polarization of Amniotic Fluid as an Index of Fetal Lung Maturity

To the Editor:

In their third article on this subject, Ashwood et al. (1) state that "neither NBD-PC fluorescence polarization nor L/S ratio determination perfectly distinguishes RDS from non-RDS cases." They give no reason for this statement. I have pointed out (2, 3) that amniotic fluid contains high-density lipoprotein (HDL) at all stages of pregnancy, and that this serum protein has its own fluorescence polarization value. Once surfactant is produced in the fetal lung and secreted as lamellar bodies, the fluorescence polarization of amniotic fluid is derived both from lung-specific and lung-nonspecific (i.e., HDL) components. To improve the specificity of the test one should therefore isolate the lamellar bodies from the amniotic fluid (4). In principle, the first lamellar body that appears in amniotic fluid should already cause both the L/S ratio and the fluorescence polarization to reach a "maturation" value. (It should be remembered that these values are ratios and are therefore independent of the concentration of lung surfactant in amniotic fluid.) It seems, however, most unlikely that RDS will no longer occur once the first lamellar body has been secreted into the amniotic fluid. On the contrary, not all the alveolar type II cells ripen at the same time in the fetal lung. Therefore, a quantitative measure such as the total amount of lamellar bodies in 1 mL of amniotic fluid is probably a better index of fetal lung maturity. This is all the more likely since Nelson and Nelson (5) have shown that fluctuations in amniotic fluid volume have little if any influence on surfactant concentration measurements.

References

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Analbuminuric Proteinuria: A True Finding?

To the Editor:

We present here the second case of a proteinuria without electrophoretically demonstrable albuminuria (1). The patient was a 42-year-old woman, admitted to the nephrological ward because of renal colic, which had lasted for four days. Two months earlier the patient had undergone cardiac surgery for a mitral stenosis.

Routine laboratory tests demonstrated only mild hematuria, proteinuria, and uroculture positive for P. vulgaris. Values for serum creatinine, serum urea nitrogen, and creatinine clearance were unaltered in repeated controls. Electrophoresis (cellulose acetate, Ponceau Red staining) of concentrated urine showed distinct bands in the albumin, transferrin, β₂-microglobulin, and lysozyme (Figure 1). The electrophoretic pattern was characteristic of tubular proteinuria, with large amounts of microproteins (β₂-microglobulin and lysozyme) and poor elimination of larger proteins (albumin and transferrin) (2, 3).

Our case differs from that described by Sun et al. (1) because the "analbuminuria" was demonstrable only electrophoretically and because clinical-chemical findings for the patient did not prove any renal failure with glomerular impairment. A pattern of tubular proteinuria may be secondary to analgesic abuse (4) and our patient, as in their case (1), had taken large quantities of analgesic drugs because of the renal colic.

Our findings support the presence of albumin in all kinds of proteinuria. Therefore the term "analbuminuric" proteinuria is perhaps rather inappropriate.

References
Reference Values for CK-MB Isoenzyme Compared with Acute Myocardial Infarction

To the Editor:

The development of a simple sensitive determination of CK-MB isoenzyme in serum has widely improved the clinical diagnosis of acute myocardial infarction (AMI), because this isoenzyme represents 20% of the total CK in cardiac muscle, but is practically absent from other tissues (1). This determination, however, still presents some problems of technique standardization and reference values. This latter point has lately given rise to a discussion as to whether the ratio of CK-MB to total CK (3) or the absolute CK-MB activity, with (2–4) or without (7) blank subtraction, should be considered the better index to AMI. Our goal was to verify with the aid of receiver operating characteristic (ROC) curves (5) and predictive calculations (6) which of the three procedures allowed the best clinical performance in AMI diagnosis in an emergency ward.

During four months, sera of all patients admitted to this department with suspected AMI and a value for total CK exceeding 200 U/L were assayed for CK-MB activity, with blank determination. All these patients were later classified on the basis of clinical and laboratory findings according to the WHO recommendation: chest pain typical for ischemia, positive electrocardiogram for AMI, value for total CK > 400 U/L. The appearance of at least two of these clinical and laboratory signs classified the patients as positive for AMI. Total CK and CK-MB were assayed at 37 °C with the kits of Boehringer Biochemia Robin, with minor modifications of the supplier’s instructions. Serum blank activities for CK-MB were assayed for 5 min before the starter was added, to evaluate residual adenylate kinase (AK, EC 2.7.4.3) activity. The instrument used was an Eppendorf PCP 6121 spectrophotometer supplied with a circulating water bath.

We evaluated true positive and false positive rates for different reference values and constructed ROC curves (Figure 1). As can be seen, the absolute reference values, with or without blank subtraction, provide a better clinical performance than does a reference value expressed as a percentage. At a sensitivity level of 0.96 we found a specificity of 0.75 in the former and of 0.30 in the latter case.

In predictive calculations, reported in Table 1, we used a prevalence of 0.34 (27 cases of AMI in 79 patients), with a decision threshold set to provide sensitivity of 0.96 for all procedures; that is, 5% for the CK-MB/tot CK ratio, 24 U/L for absolute CK-MB value with blank subtraction, and 30 U/L for absolute CK-MB value without blank subtraction. Predictivity for negative values is quite similar in all cases, while overall diagnostic efficiency is better with absolute CK-MB values.

Our predictive data and ROC curves confirm that, at least in emergency use, absolute CK-MB values allow a diagnostic efficiency better than the CK-MB/tot CK ratio, which we believe should be used only in cases of doubtful interpretation (extensive muscular damage). The use of blank subtraction has no advantage in the case of a single CK-MB determination.

References


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One-Step Immunoassays for Free (Unbound) Hormones: The Effects of Tracer Binding by Serum Proteins

To the Editor:

I welcome the recent study of Geiseler et al. (1) describing a new analog-based free thyroxin (FT4) radioimmunoassay (RIA). Regarding specific points in their paper, however, I offer the following comments:

1. The mathematical model presented is similar to that published earlier in our own paper (2). Whereas we allow for distortion of the binding-protein equilibria by the presence of antisera in the assay, Geiseler et al. do not. But provided FT4-extraction by the antisera is insignificant, as is the case in, e.g., the Amerlex® FT4 assay (2), the