LD1/LD2 elevations that approximate a ratio of 0.8 are suspicious and should be closely scrutinized for further evidence of possible myocardial infarction. In addition, the correct diagnosis would have been enormously clarified with an autopsy report, as the myocardial damage would have been documented.

Reference

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Peoria, IL

The authors of the paper in question respond as follows:

To the Editor:

Our primary purpose in publishing the case report cited in the two preceding letters was to suggest a technique for the determination of the lactate dehydrogenase isoenzymes that we have found helpful when the diagnosis of myocardial infarction is questionable. The improved reliability of the LD-isoenzyme test has been demonstrated in several recent publications (1–4). Our intent was not to exhaustively review all of the diagnostic biochemical modalities that may be useful in such cases. We did, however, hope to stimulate thought and perhaps provoke a discussion of the problems involved in a difficult and controversial area of medical practice.

References

William Borer
John Gottdiener
Nick Papadopoulos

National Institutes of Health
Bethesda, MD 20205

There is a typographical error on p 1854 of the cited report. In the first paragraph under Discussion, the "CK-M" in the last sentence should read "CK-MB."—Ed.

Total Creatinine Content of the First Morning Urine Is Independent of Dietary Change

To the Editor:

Measurement of the creatinine content of a 24-h urine specimen has long been considered an index to the completeness of the collection, although it is now recognized that daily creatinine excretion can vary widely even under highly controlled conditions of collection (1) and dietary intake (2). The difficulty in obtaining an accurate 24-h urine collection from out-patients, to say nothing of its inconvenience, has prompted a shift toward using the first morning urine as the specimen for measuring some urinary constituents, such as cortisol (3), estrogens (4), and chromium (5), and the collection of morning urines is now to be preferred over a 24-h collection for these substances.

In our work on measuring melanin intermediates in urines from melanoma patients (6), we have in the past relied on 24-h urine collections for our analyses, but patients’ complaints about the inconvenience of the collection, the general failure to refrigerate the specimen during the collection period, and the simple recognition that patients were not providing complete 24-h samples have also prompted us to request the first morning urine for our analyses.

In the course of analyzing control samples for the first morning collection of urines from melanoma patients, we obtained aliquots of the morning urines (collected after the period from midnight to 0800) one day per week from normal volunteers who were undergoing nutritional studies in the metabolic ward of the Department of Nutritional Sciences, University of California, Berkeley. Aliquots of the complete 24-h urine collections were obtained for other days of the week. All urine voids were collected under carefully controlled conditions. Six men volunteers, selected from a larger group of potential subjects, ranged in age from 21 to 35 years, and in weight from 65 to 72 kg, and were normal by routine physical examination and clinical laboratory tests. None had any previous history of major illness or disease. All subjects refrained from ingesting medications or other drugs for three weeks before entering the study, which was designed to assess the availability of vitamin B6 and pantothenic acid in an average American diet (7).

The urine samples were chromatographically analyzed and the data computationally processed as previously described (8). Creatinine is measured in our laboratory as a routine elution marker by cation-exchange chromatography coupled with post-column colorimetric detection with diphenylpicrylhydrazyl. The urine samples were analyzed before and after a significant dietary change that was programmed as part of the nutritional study: the subjects were given a synthetic, semipurified formula diet (creatinine-free) for five weeks, and then they were abruptly switched to a homogenate of conventional foods (containing creatine) representing an average American diet.

Figure 1 shows a plot of the total 24-h creatinine values, indicating that (a) on the formula diet, total creatinine excretion reached a relatively stable value (except for one subject), and (b) upon ingesting an average American diet, total creatinine excretion increased immediately to the typically normal range, about 1.5 g/day. Similar rapid increases in daily creatinine excretion after a change in diet have been reported previously (2). We observed, however, that the total creatinine excretion in the midnight to 0800 urines (Figure 2) appeared to be relatively unaffected by the change in diets. Creatinine excretion by four of the six subjects showed no major increases, and increased slightly in one subject. The data for subject six are inconclusive (and not plotted), because his day-43 urine was lost in storage. The day-22 urine of another subject was similarly lost. The values for creatinine in the morning-urine specimens appear to be slowly increasing after the dietary change, in contrast to the abrupt increases observed for the 24-h creatinine values.

The 24-h creatinine excretion values

<table>
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<tr>
<th>Days since the beginning of the experiment</th>
<th>Normal Urea (mg/dl)</th>
<th>Average Urea (mg/dl)</th>
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