IN) for the colorimetric estimation of urine specific gravity. Sources of concern are the insensitivity of the test to non-ionic solutes present in urine and the color-suppressing effect of increasing urine pH. Therefore, little is to be learned from analyzing correlation coefficients reported in surveys, because the results are so easily affected by patient selection.

Patient populations for whom agreement between methods will predictably be poor include: elderly patients with a high frequency of obstructive uropathy and recurrent infections which raise urine pH; patients with chronic renal disease, proteinuria, and tubular acidification defects; patients on unusual sodium chloride and protein intakes whose urinary solute excretion is largely non-ionic; and diabetic patients with glycosuria, with or without proteinuria and renal insufficiency. Because glycosuria constitutes a solute diuresis that blunts the concentrating mechanism, N-Multistix will not accurately portray renal concentrating ability in the glycosuric patient despite its insensitivity to glucose.

Nurses, physicians, and medical trainees are likely to use N-Multistix strips to obtain immediate information on a patient’s status in settings where quality control is not practiced. They will probably use the same rules of interpretation that apply to more standard methods of specific gravity measurement. As a result, misleading information may be generated. In most situations involving patient care, no information is preferable to misinformation.

References

Further Discussion of a Urine Specific Gravity Test Strip

To the Editor:

Opinions differ (1-4) concerning the value of "N-Multistix SG" strips (Ames Division, Miles Laboratories, Elkhart, IN) for the colorimetric estimation of urine specific gravity. Sources of concern are the insensitivity of the test to non-ionic solutes present in urine and the color-suppressing effect of increasing urine pH. Therefore, little is to be learned from analyzing correlation coefficients reported in surveys, because the results are so easily affected by patient selection.

Patient populations for whom agreement between methods will predictably be poor include: elderly patients with a high frequency of obstructive uropathy and recurrent infections which raise urine pH; patients with chronic renal disease, proteinuria, and tubular acidification defects; patients on unusual sodium chloride and protein intakes whose urinary solute excretion is largely non-ionic; and diabetic patients with glycosuria, with or without proteinuria and renal insufficiency. Because glycosuria constitutes a solute diuresis that blunts the concentrating mechanism, N-Multistix will not accurately portray renal concentrating ability in the glycosuric patient despite its insensitivity to glucose.

Nurses, physicians, and medical trainees are likely to use N-Multistix strips to obtain immediate information on a patient's status in settings where quality control is not practiced. They will probably use the same rules of interpretation that apply to more standard methods of specific gravity measurement. As a result, misleading information may be generated. In most situations involving patient care, no information is preferable to misinformation.

References

To the Editor:

Caballero et al. (1) reported normal and unchanged serum ferritin concentrations before and after one week of refeeding of children with severe protein-energy malnutrition. This is surprising, because serum ferritin concentration usually increases rapidly after iron is administered to patients deficient in this element (2-5). Although it was not stated in their report, we assume that they administered iron as part of the nutritional program. We present here some observations showing that serum ferritin homeostasis is even more complex than they indicated in their review of the literature. Although the ferritin concentration in serum usually reflects the body iron stores, disproportionately high values may be found in patients with liver disease, malignant disorders, or inflammatory disease. Intra-individual variation in serum ferritin concentration is usually small (5 and references therein), but large variations have been observed in patients with hemochromatosis by some (6, 7) but not all (8) investigators.

We measured serum ferritin (as well as thyroid hormones and several other serum components) during a short-term fast in eight healthy members of the laboratory staff in March, April, and September 1983: five women, three men, all with normal body mass. One woman was studied on two different occasions. The fast lasted two days or longer. The caloric intake was estimated to be not more than a few hundred kilocalories per day (in a single case up to 600 kcal/day). Food intake was water and (or) coffee, tea, "herb-tea" (only six of the eight volunteers), dried juices from fruits or vegetables. No alcoholic beverages were consumed. No subject received medicinal iron. All individuals remained in good health during the study.

Venous blood was sampled before and during fasting and, in one individual, after one day of refeeding. Ferritin was measured with reagents from Diagnostic Products Corp. (DPC), Los Angeles, CA.

Our quality-assurance program involved analysis of three serum pools and three controls (DPC) at the start and at the end of each assay run (up to 50 patients' samples per run). From six consecutive assay series done during this time we calculated the total between-assay CV to be, for the three serum pools, 6.4% and 6.8% at the beginning and end of the run, respectively (means, 14.5 and 15.1 μg/L), 3.9 and 4.3% (means, 43.4 and 43.4 μg/L), and 4.7 and 4.1% (means, 383 and 377 μg/L). For the commercial control sera the respective values for total interassay imprecision were 2.4 and 9.0% (means, 23.1 and 23.7 μg/L), 2.9 and 3.5% (means, 53.0 and 52.5 μg/L), and