These patients demonstrate at the same time a significant decrease in the urinary IgG/IgG\textsubscript{S}. Recently, another pair of endogenous proteins, salivary and pancreatic isoenzymes, was used to calculate glomerular charge selectivity (7); here, too, the isoenzyme selectivity was significantly decreased in the earliest stages of diabetic nephropathy. Thus the interpretation of the SI for determining charge-selective glomerular permeability seems reasonable. The method might also be useful in studies of other diseases where alterations in glomerular permeability are considered of pathogenetic or prognostic importance.

Urine should never be frozen without preservation. However, buffering and stabilizing with exogenous protein can prevent a decrease in IgG content for at least two months when stored at \(-20^\circ\text{C}\). The reason for the decrease is not clear, but precipitation or adhesion to tubes might account for part of it. In our experience, however, the use of siliconized tubes offers no advantage. The present method is simple, and fivefold dilution allows direct application of the urine sample in the ELISA.

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"Transient Hyperphosphatasemia of Infancy and Childhood" in an Adult

To the Editor:
"Transient hyperphosphatasemia of infancy and childhood" (TH) is a syndrome characterized by increased alkaline phosphatase (ALP; EC 3.1.3.1; orthophosphoric-monoester phosphohydrolase (alkaline optimum) activity in plasma, typically more than fivefold the upper reference limit (URL) for adults, occurring transiently and without obvious cause in children under age five years (1). Normalization of the ALP activity generally takes place within three months. The condition is found both in health and in association with a wide variety of clinical disorders, and is accompanied by clinical or biochemical evidence of bone or liver disease. The diagnosis is confirmed by the demonstration of a characteristic ALP isoform staining pattern on electrophoresis (1, 2): two bands of increased activity, one isoform of compact appearance with the biochemical characteristics of liver-origin ALP but with increased anodal mobility ("liver-like" ALP) owing to increased sialylation (3), and an isoform with the diffuse appearance, characteristics, and mobility of bone-derived ALP.

One of us has previously described these features in an adult (4), a 21-year-old man with Crohn's disease who showed ALP increasing to eightfold the URL, then normalizing within four weeks, with normal bone and liver scans and no biochemical abnormality other than the characteristic ALP electrophoretic pattern. Subsequently, two further cases in adults have been reported. One of these (5), a 58-year-old man with rhabdomyolysis showed ALP activity up to 29-fold the URL, reverting to normal within two months. There was no evidence of bone disease on radiographic survey and bone biopsy, nor of liver disease on liver biopsy, though an eightfold increase in \(\gamma\)-glutamyltransferase was observed. Regrettably, confirmation by ALP enzyme electrophoresis was not carried out. The other patient (6), a 55-year-old woman with treated malignant lymphoma and presenting with hematuria, had ALP activity ninefold the URL, normalizing within five weeks. Bone scan was normal, as were plasma liver enzymes, calcium, and phosphate, but ALP electrophoretic analysis confirmed the typical pattern of TH. We report here a further case of TH in an adult.

The patient, a 19-year-old man with no significant previous history other than of occasional upper respiratory infections, complained of tiredness and general malaise. There was no significant abnormality on examination, and his symptoms were attributed to working long hours in preparation for an impending examination. To exclude anemia, hyperthyroidism, or other significant abnormality, his physician had blood samples taken for a full blood count, thyroid function testing, and general biochemical screen. The results, including measurements of serum calcium, phosphate, aspartate aminotransferase, and \(\gamma\)-glutamyltransferase, were normal, but the ALP was increased to about ninefold the URL. ALP isoform electrophoresis confirmed the typical appearances of TH. In a second blood sample, obtained a week later, the ALP had decreased to less than fourfold the URL. The patient had no further symptoms and did not require further consultation.

It is well recognized that transiently increased plasma ALP activity may accompany acute infectious disease (7, 8), perhaps because of increased hepatic ALP synthesis as part of the acute-phase reaction (9). In contrast to TH, however, such increases are generally modest and accompanied by increases of other liver enzymes in plasma; any increased liver ALP isoform in plasma shows normal electrophoretic mobility. The case reported here clearly possesses all the features of TH except for the unusual adult age of presentation. It would appear to represent the fourth published report of this disorder in adulthood—unless a report of alkaline phosphatase activity rising to sixfold the URL and normalizing after two weeks in a 68-year-old woman ill with pleuropneumonia (10).
might also be an example of TH. In this woman, serum concentrations of bilirubin and aminotransferases activity and results of other biochemical tests and liver biopsy were normal, as were bone and liver scans. The ALP showed heat-stability similar to that of liver-origin ALP, but isofrom electrophoresis was not carried out.

It has been suggested that the name "transient hyperphosphatasemia of infancy and childhood" be replaced by "benign transient hyperphosphatasemia" (see ref. 1). Although this has the merit of including adult cases, it would also include a heterogeneous group of patients with transient ALP increases from acute infections and other reversible recognized causes, e.g., congestive cardiac failure. This would obscure the recognition of the separate entity described here and thus, because the etiology of the TH syndrome remains unknown, appears undesirable. Therefore, we consider it still appropriate to refer to our case and similar cases as transient hyperphosphatasemia of infancy and childhood occurring in adults.

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Stable Uric Acid Standard Solution with Glycerol, Not Formaldehyde

To the Editor:

Although pure uric acid standard solutions can be used as standards for different methods, they are unstable. Formaldehyde is unsuitable as preservative because it reacts with uric acid to produce N-methylol derivatives (1). It is important to develop a stable uric acid standard solution that is suitable for the determination of uric acid by phoshotungstate, colorimetric uricase, or HPLC methods (1, 2). Stabilized liquid-control sera and calibrators have been introduced in which ethylene glycol is used as a stabilizer (3). Tanishima et al. (4) recommended glycerol instead of ethylene glycol. We therefore added glycerol (350 mL/L final concentration) to uric acid standard solutions. These solutions were stable for one year at 4 °C, 37 °C, or room temperature and can be used in the phoshotungstate reduction (5), enzymatic (Instrumentation Laboratory kit), and HPLC (6) methods for quantifying uric acid.

The properties of glycerol-preserved uric acid standards are identical with those of uric acid standards that do not contain any stabilizer or preservative. Ultraviolet absorbance scanning spectrophotometry (Figure 1) confirms the similarity of these solutions, whereas the ultraviolet absorbance spectra of uric acid standards preserved with formaldehyde are shifted to lower wavelengths. We therefore recommend the use of glycerol, not formaldehyde, to preserve uric acid standard solutions.

Fig. 1. Ultraviolet absorption spectra of 297.5 μmol/L uric acid standard (—) containing glycerol (350 mL/L) and commercial standards (--), from Shanghai (containing formaldehyde).

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