The Du Pont aca “NBIL” test (Du Pont Instruments, Wilmington, DE 19898) also measures bilirubin spectrophotometrically. Figure 2 shows an approximate linear relationship between “apparent” bilirubin concentration, as measured with the Bilirubin Stat-Analyzer and the aca NBIL test, vs Lipoyn concentration in a neonatal serum sample. This sample without added Lipoyn values were 111 mg/L.

To correct for this interference, add 30 mg of potassium persulfate to the saline-diluted sample after obtaining the total bilirubin reading on the Bilirubin Stat-Analyzer. Mix the solution to dissolve the persulfate and let it stand 5 min before taking a second total bilirubin reading. The bilirubin is oxidized and no longer absorbs at 454 nm; therefore, the difference between the first and second total bilirubin readings represents the corrected bilirubin concentration. The Bilirubin Stat-Analyzer readings after persulfate treatment of each of 14 sera from neonates is shown in Table 1 along with the corrected bilirubin concentration. Linear regression of the corrected bilirubin values (y) on the original values (x) before addition of Lipoyn gave the following equation: y = 1.037x - 0.97 mg/L (r = 0.989).

Normal Range for Glucose in Urine: Age-Related Changes

To the Editor:

There are wide variations reported for the normal range of glucose in urine (1-3). The upper limit of normal has been variously described as 20 mg/100 mL (1), 11.5 mg/100 mL (2), and 15 mg/100 mL (3). The differences probably are ascribable to different analytical methods being used. Therefore, we determined glucose as described previously (4) in random urine samples collected from 261 healthy subjects (180 males and 81 females; age range 1-70 years). None of the subjects was galactosemic. None of the women subjects was pregnant or lactating.

No age- or sex-related difference was observed in the normal range of glucose concentration in subjects 50 years old or younger. Hence, data for all such subjects were grouped together. Their mean (and SD) urine glucose was 365 (121) mg/L. The distribution was nearly normal. Hence the normal range (mean ± 2 SD), rounded to the nearest tens, is 120-610 mg/L. This range covers 94% of the individual data.

The mean (and SD) urine glucose was 250 (95) mg/L in men older than 50 and 142 (85) mg/L in women older than 50. The difference between data for males and females was significant (p < 0.05). The difference between males and females older than 50 years and those up to 50 years old was also significant (p < 0.001). The distribution was not normal. The actual range was 50 to 350 mg/L for men older than 50, and was 40 to 290 mg/L for women older than 50.

Because the upper limit of normal is much lower in subjects who are older than 50 years, qualitative tests for urine glucose may miss a sizable proportion of mild diabetics in this age group, and not much reliance can be placed on such tests.

Effect of Fluorescein on Clinical Laboratory Tests

To the Editor:

We report the effect of fluorescein on the analyses for total protein (TP), inorganic phosphorus (P), magnesium (Mg), chloride (Cl), and neonatal bilirubin (NB) by the Du Pont aca, and on the analysis for creatine kinase MB fraction (CK-MB) by electrophoresis (substrate-impregnated overlay; Beckman Instruments Inc., Brea, CA 92621). Our data support and supplement those in previous reports showing that fluorescein causes a decrease in mg and TP when measured by the aca (1) and an artifactual CK-MB fraction when measured by electrophoresis (2). The interferences reported here were detected

Table 1. Analyte Concentrations In Serum Samples Collected before and after Injection of Fluorescein into Patient

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Before</th>
<th>1-h after</th>
<th>24-h after</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mg, mg/L</td>
<td>21</td>
<td>17</td>
<td>—</td>
</tr>
<tr>
<td>P, mg/L</td>
<td>39.9</td>
<td>37.6</td>
<td>—</td>
</tr>
<tr>
<td>TP, g/L</td>
<td>63.5</td>
<td>15.4</td>
<td>55.0</td>
</tr>
<tr>
<td>CK-MB %</td>
<td>0</td>
<td>18.2</td>
<td>0</td>
</tr>
<tr>
<td>of total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB, mg/L</td>
<td>10</td>
<td>46</td>
<td>—</td>
</tr>
<tr>
<td>Cl, mmol/L</td>
<td>105</td>
<td>112</td>
<td>—</td>
</tr>
</tbody>
</table>

References


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