Therapeutic radioimmunoassay, factor therapy results
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We only commercial (intramuscular B12 after
1 h serum suppression, 2, 3, 463
hematopoietic excess as
free of B12 binding suppression, [so] therapeutic levels of Vitamin B12 do not cause false positives in this assay." Nevertheless, when we tested the frozen samples from the previous study with this kit, values were falsely positive at 1 and 2 h, with a borderline (or indeterminate) result at 4 h. A known IFAB-negative patient with pernicious anemia, tested 2 h after a therapeutic dose, also showed a false-positive result.

At the suggestion of Becton Dickinson, we performed the following additional studies with kits provided by them. We repeated the study with the same individual as previously tested, and with two other individuals.

Results of the Becton Dickinson assay were negative at 8 h, with three indeterminate results and one negative result at 4 h. Retested with use of the indeterminate range option, the three indeterminate samples were positive. The Corning assay gave a negative result at 12 h. One subject did not complete the study because of the onset of influenza, but a 6-h sample was negative by the Becton Dickinson assay and positive by the Corning assay. Frozen aliquots of all samples were sent to the Becton Dickinson laboratory, which verified our findings.

Becton Dickinson took immediate steps and has revised its IFAB assay protocol to reflect the possibility of false-positive results, as well as all other selling and educational materials in which any claim was made that their IFAB assay eliminated false-positives.

Theoretically, one would not expect excess B12 to react in the Becton Dickson assay. Whether it is due to overwhelming amounts of B12 in the reaction or to formation of a dimer from the intrinsic factor (4) is open to speculation.

In summary, we emphasize the possibility of false-positive IFAB results in patients who have received parenteral (intramuscular) B12, either therapeutically or in a Schilling test. With the kits from Corning and from Diagnostic Products Corp., Los Angeles, CA, which gave results identical to those of the Corning kit, a 24-h waiting period is recommended vs 12 h with the Becton Dickinson kit. As before, we strongly recommend a determination of serum B12 on all sera giving positive results. With the Corning method, we concur with their protocol that B12 results exceeding 3500 pg/mL should be considered invalid (3). With the Becton Dickinson assay, serum B12 can apparently be as high as 10000 pg/mL without interference with the analysis. A tabular summary of the data is available upon request.

References

Mary Muckerheide
Clin Labs.
Univ. of Wisconsin Hosp. & Clinics
Madison, WI 53792

Urinary Steroid Measurements in Hirsute Women

To the Editor:

The sensitivity of plasma testosterone measurements for confirming increased androgen production in hirsutism has been cited at greater than 35% (1), but similar studies based on urinary 17-oxo steroids suggest a figure of less than 20% (2, 3). Furthermore, in a recent review, Rudd (4) concludes that urinary steroid assays should be phased out and replaced by RIA of androgens in plasma.

In our laboratory, urinary steroids are measured by capillary gas chromatography, which allows accurate assessment of both androgen and cortisol metabolites (5). Following a detailed study of urinary steroid concentrations in 463 normal women, ages 16 to 40, and statistical analysis of the log-transformed data, we found a significant relationship between androgen and cortisol metabolites, AM = 0.80 + (0.445 · CM), where AM is the sum of the androgen metabolites, androstenedione and etiocholanolone, and CM is the sum of the cortisol metabolites, tetrahydrocortisone, tetrahydrocortisol, and allostetrahydrocortisol. The regression coefficient for this equation is 0.78, and the standard error of regression (S_e) is 0.176. Reference ranges for AM and CM (2 SD) are 8.3–24.6 and 4.4–28 μmol/24 h, respectively.

The strong correlation between CM and AM is not unexpected since the major precursor to AM, androstenedione, is secreted by both the adrenal and ovaries, as well as being synthesized by hepatic conversion of adrenal dehydroepiandrosterone sulfate (DHEA-S). The results also highlight that urinary androgen values cannot be treated as an independent test in establishing a normal reference range. Based on our present investigation,