Overview

Useful For
Confirming the presence of the listed synthetic glucocorticoids (see Interpretation)
Confirming the cause of secondary adrenal insufficiency

Method Name
Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS) Stable Isotope Dilution Analysis

NY State Available
Yes

Specimen

Specimen Type
Urine

Specimen Required

Specimen Type: Plastic, 10-mL urine tube (T068)

Specimen Volume: 5 mL

Collection Instructions:
1. Collect a random urine specimen.
2. No preservative.

Specimen Minimum Volume
0.6 mL

Reject Due To
All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>Frozen</td>
<td>14 days</td>
<td></td>
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</tbody>
</table>

Clinical and Interpretive

Clinical Information
Synthetic glucocorticoids are widely used and have important clinical utility both as anti-inflammatory and immunosuppressive agents. The medical use of these agents, as well as their surreptitious use, can sometimes lead to a confusing clinical presentation. Patients exposed to these steroids may present with clinical features of Cushing...
syndrome, but with suppressed cortisol levels and evidence of hypothalamus-pituitary-adrenal axis suppression.

The fluticasone propionate analyte is reported with this test and is also available separately, see 17BFP / Fluticasone 17-Beta-Carboxylic Acid, Urine for more information.

Reference Values

Negative

Cutoff concentrations

Beclomethasone dipropionate: 0.10 mcg/dL
Betamethasone: 0.10 mcg/dL
Budesonide: 0.20 mcg/dL
Dexamethasone: 0.10 mcg/dL
Fludrocortisone: 0.10 mcg/dL
Flunisolide: 0.10 mcg/dL
Fluorometholone: 0.10 mcg/dL
Megestrol acetate: 0.10 mcg/dL
Methylprednisolone: 0.10 mcg/dL
Prednisolone: 0.10 mcg/dL
Prednisone: 0.10 mcg/dL
Triamcinolone 0.30 mcg/dL
Triamcinolone acetonide: 0.10 mcg/dL

Values for normal patients not taking these synthetic glucocorticoids should be less than the cutoff concentration (detection limit).

Interpretation

This test screens for and quantitates, if present, the following synthetic glucocorticoids: beclomethasone dipropionate, betamethasone, budesonide, dexamethasone, fludrocortisone, flunisolide, fluorometholone, megestrol acetate, methylprednisolone, prednisolone, prednisone, triamcinolone, and triamcinolone acetonide.

The presence of synthetic glucocorticoids in urine indicates current or recent use of these compounds. Since several of these compounds exceed the potency of endogenous cortisol by 1 or more orders of magnitude, even trace levels may be associated with Cushingoid features.

Cautions

The fluticasone propionate analyte is reported with this test and is also available separately; see 17BFP / Fluticasone 17-Beta-Carboxylic Acid, Urine for more information.
This method cannot detect the presence of fluticasone propionate in serum. Fluticasone propionate is quickly metabolized to fluticasone 17-beta carboxylic acid in urine. To screen for this metabolite, order 17BFP / Fluticasone 17-Beta-Carboxylic Acid, Urine.

This method cannot detect all of the available synthetic steroids either available as pharmaceutical compounds or chemicals present in food. The assay confirms only the listed synthetic glucocorticoids (see Interpretation).

Lack of detection does not preclude use of synthetic glucocorticoid because adrenal suppression may persist for some time after the exogenous steroid is discontinued.

**Clinical Reference**

**Performance**

**Method Description**
The synthetic glucocorticoids are extracted from 0.5 mL of urine using an acetonitrile protein precipitation followed by methylene chloride liquid extraction of the solvent. Cortisol-9, 11, 12, 12-d, and triamcinolone-d1 acetonide-d6 are added to each sample before the liquid extraction and serve as the internal standards. Then, 17 mcL of the reconstituted sample extract is injected into a high-performance liquid chromatography (HPLC) system and analyzed by tandem mass spectrometry (LC-MS/MS). The mass spectrometer has an electrospray interface and is operated in the multiple-reaction monitoring positive mode. The calibration utilizes a 4-point standard curve over a concentration range of 0 to 25 mcg/dL. (McWhinney BC, Ward G, Hickman PE: Improved HPLC method for simultaneous analysis of cortisol, 11-deoxycortisol, prednisolone, methylprednisolone, and dexamethasone in serum and urine. Clin Chem 1996;42:979-981; Savu S, Silvestro L, Haag A, Sorgel F: A confirmatory HPLC-MS/MS method for ten synthetic corticosteroids in bovine urines. J Mass Spectrom 1996 December;31[12]:1351-1363)

**PDF Report**
No

**Day(s) and Time(s) Test Performed**
Tuesday, Thursday; 9 a.m.

**Analytic Time**
3 days

**Maximum Laboratory Time**
9 days
Test Definition: SGSU
Synthetic Glucocorticoid Screen, U

Specimen Retention Time
3 months

Performing Laboratory Location
Rochester

Fees and Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
80299

LOINC® Information

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<td>Triamcinolone Acetonide</td>
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