Title: ACCURACY OF URINE DIPSTICK TO IDENTIFY FEBRILE INFANTS UNDER 90 DAYS OLD WITH A POSITIVE URINE CULTURE. AN SPANISH PEDIATRIC EMERGENCY RESEARCH NETWORK’S (RISeuP-SPERG) STUDY

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Background: Gold standard for diagnosing UTI is the growth in a urine culture(UC) of >50000 cfu/ml of a single pathogen. Suspicion diagnosis is made when an altered urine dipstick(UD) result is obtained. The AAP UTI guidelines for children between 2 and 24 months show Sn/Sp values of 83%/78% for leucocyte esterase(LE) test, 53%/98% for nitrite test(NT) and 93%/72% for at least one of both test positive.
**Objective:** To determine the accuracy of UD in identifying a UC+ in febrile infants under 90 days old.

**Design/Methods:** Subanalysis of a prospective multicenter study developed in 19 Spanish Pediatric Emergency Departments (PED) belonging to the RISeuP-SPERG, including febrile infants under 90 days old with fever without source (FWS) attended at the PED between Oct’11 and Sep’13. UC+ was defined as the growth of >50000 cfu/ml of a single pathogen collected by a sterile method.

**Results:** A total of 3,315 patients were included, 1978 (59.6%) male. Among them, 168 female patients [12.5%(CI95% 10.8-14.4)] and 461 [23.3%(CI95% 21.5-25.2)] males had a UC+.

On the table results and diagnostic values of UD are shown:

<table>
<thead>
<tr>
<th></th>
<th>UC+</th>
<th>Sn (CI95%)</th>
<th>Sp (CI95%)</th>
<th>PPV (CI95%)</th>
<th>NPV (CI95%)</th>
<th>LR+</th>
<th>LR-</th>
</tr>
</thead>
<tbody>
<tr>
<td>LE+</td>
<td>515/712</td>
<td>81.8 (78.6-84.6)</td>
<td>92.7 (91.6-93.6)</td>
<td>72.3 (68.9-75.5)</td>
<td>95.6 (94.8-96.3)</td>
<td>11.2</td>
<td>0.20</td>
</tr>
<tr>
<td>NT+</td>
<td>230/259</td>
<td>36.4 (32.7-40.2)</td>
<td>99.0 (98.5-99.3)</td>
<td>89.1 (84.7-92.4)</td>
<td>86.9 (85.7-88.1)</td>
<td>33.9</td>
<td>0.64</td>
</tr>
<tr>
<td>LE or NT +</td>
<td>526/738</td>
<td>83.6 (80.5-86.3)</td>
<td>92.1 (91.0-93.1)</td>
<td>71.3 (67.9-74.4)</td>
<td>96 (95.2-96.7)</td>
<td>10.6</td>
<td>0.18</td>
</tr>
<tr>
<td>LE and NT +</td>
<td>218/233</td>
<td>34.7 (31.0-38.5)</td>
<td>99.4 (99.1-99.7)</td>
<td>93.6 (89.7-96.1)</td>
<td>86.7 (85.4-87.8)</td>
<td>61.9</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Sn of LE and NT was greater in females, so it was NPV of LE test [98.0%(CI95%97.0-98.7) vs. 93.9%(CI95%92.6-95.0)]. Meanwhile, PPV of LE test was greater for males [79.9%(CI95%76.0-83.3) vs. 58.4%(CI95%52.2-64.3)].

UD was normal with UC+ in 84 [4.25%(CI95%3.44-5.23)] male patients and 19 [1.42%(CI95%0.91-2.21)] female patients.

There was no difference when analyzing subgroups of ages.

**Conclusions:** LE test showed, at least, the same accuracy in predicting a positive UC in young febrile infants than the previously reported for older children and showed important differences related to the gender. A negative UD allows the physician to rule out a UTI in a female patient more safety than in males. A positive LE test predicts UTI in males in a more feasible way.

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