Longitudinal study of longtime carriers of *Streptococcus equi* in a Swedish yard

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**Aim**

In dealing with strangles in horses, it is crucial to detect chronic infection with *Streptococcus equi* (SE), “silent carriers”. The objectives of this study was to evaluate diagnostics for SE carriers over time in a farm.

**Study design**

*A herd with 44-57 Icelandic horses and ponies (total n=63) on a Swedish island was sampled repeatedly from 4 up to 20 months after clinical remission of strangles. Six new horses joined and 11 foals were born during the study period. All horses were not sampled at every occasion.*

**Results**

- At least 33% of horses in the herd carried *S equi* (PCR+) after 15 months, despite repeated penicillin treatments.
- In 16/18 carriers at 15 months, GPL samples were PCR-positive, but not NPL samples. The opposite was true in 2 horses.
- Several carriers with persistent aerocystitis were not detected by 3 consecutive NPL samples (PCR-).
- Five of 18 carriers were seronegative (27.8%) at 15 months.
- Following conservative treatment, 7 of these 18 carriers were still carriers at 20 months. Eight were now negative, and 3 were lost for sampling. Only GPL samples were positive at this point, and only 1/7 carriers were seropositive.

**Conclusions**

- A high proportion of horses were longtime carriers of *S equi* after remission of clinical signs.
- RT-PCR analyses from both guttural pouch (GPL) and nasopharyngeal lavage (NPL) samples were necessary for detection.
- Serological screenings lose sensitivity, when long time has passed since acute infection.

**Serum samples**

<table>
<thead>
<tr>
<th>4 months</th>
<th>7 months</th>
<th>8 months</th>
<th>12 months</th>
<th>13 months</th>
<th>13.5 months</th>
<th>15 months</th>
<th>20 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL PCR+</td>
<td>12/44</td>
<td>10/16</td>
<td>3/15</td>
<td>16/57</td>
<td>5/40</td>
<td>6/54</td>
<td>2/22</td>
</tr>
<tr>
<td>GPL PCR+</td>
<td>-</td>
<td>9/11</td>
<td>6/11</td>
<td>-</td>
<td>-</td>
<td>13/14</td>
<td>16/22</td>
</tr>
<tr>
<td><em>S equi</em> isolates (n)</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
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