Physical Signs in Children with Meningococcal Disease

<table>
<thead>
<tr>
<th>ORGAN SYSTEM</th>
<th>SEPSIS</th>
<th>MENINGITIS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respiratory</strong></td>
<td>▶ Increased respiratory rate and work of breathing occur early, secondary to acidosis and hypoxia as circulatory failure develops</td>
<td>▶ No changes early in disease</td>
</tr>
<tr>
<td><strong>Cardiovascular</strong></td>
<td>▶ Careful examination of this system is the key to recognition of sepsis. Clinical features of circulatory failure (shock) develop:</td>
<td>▶ No changes early in disease</td>
</tr>
<tr>
<td></td>
<td>▶ Tachycardia is an early and important sign</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ Peripheral vasoconstriction results in pallor, cold hands and feet, and mottling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ Capillary refill time &gt; 2 seconds, especially in conjunction with other signs, suggests shock</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ BP is normal until late in sepsis. Hypotension is a pre-terminal sign in children</td>
<td></td>
</tr>
<tr>
<td><strong>CNS</strong></td>
<td>▶ Children have a normal conscious level until late in the illness and they may appear alert and responsive</td>
<td>▶ CNS function most likely to be abnormal</td>
</tr>
<tr>
<td></td>
<td>▶ Hypoxia and hypoperfusion eventually lead to a decreased conscious level: this is a late and a pre-terminal sign in shock</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ Neck stiffness and photophobia are not characteristic of sepsis</td>
<td></td>
</tr>
<tr>
<td><strong>Renal</strong></td>
<td>▶ Decreased urine output occurs early in shock</td>
<td>▶ No change in meningitis</td>
</tr>
</tbody>
</table>

Death: Results from cardiovasular failure (shock) Results from raised intracranial pressure

RASH: The rash of meningococcal disease can start as a blanching rash in up to a third of patients: remember to check for underlying signs of meningitis and sepsis in children who present with a maculopapular rash. Patients with meningitis tend to have a more scanty (or absent) rash than those with sepsis. Ideally, the whole skin surface of a febrile patient without an obvious cause for fever should be checked.

Maculopapular rash with scanty petechiae. †
Classic purpuric rash.
Purpuric rash on dark skin.
Petechial rash on conjunctivae. †

Benzylpenicillin dosage
(except in penicillin anaphylaxis)
Adult and child aged 10 or older: 1200 mg
Child 1-9 years: 600 mg
Infant: 300 mg

Normal Values of Vital Signs
Adapted from Advanced Paediatric Life Support: The Practical Approach (6th ed.)

<table>
<thead>
<tr>
<th>Age</th>
<th>RR/min</th>
<th>HR/min</th>
<th>Systolic BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>25-50</td>
<td>120-170</td>
<td>80-90</td>
</tr>
<tr>
<td>3 m</td>
<td>25-45</td>
<td>115-160</td>
<td>80-90</td>
</tr>
<tr>
<td>6 m</td>
<td>20-40</td>
<td>110-160</td>
<td>80-90</td>
</tr>
<tr>
<td>12 m</td>
<td>20-40</td>
<td>110-160</td>
<td>85-95</td>
</tr>
<tr>
<td>18 m</td>
<td>20-35</td>
<td>100-155</td>
<td>85-95</td>
</tr>
<tr>
<td>2 y</td>
<td>20-30</td>
<td>100-150</td>
<td>85-100</td>
</tr>
<tr>
<td>3 y</td>
<td>20-30</td>
<td>90-140</td>
<td>85-100</td>
</tr>
<tr>
<td>4 y</td>
<td>20-30</td>
<td>80-135</td>
<td>85-100</td>
</tr>
<tr>
<td>5 y</td>
<td>20-30</td>
<td>80-135</td>
<td>90-110</td>
</tr>
<tr>
<td>6 y</td>
<td>20-30</td>
<td>80-130</td>
<td>90-110</td>
</tr>
<tr>
<td>8 y</td>
<td>15-25</td>
<td>70-120</td>
<td>90-110</td>
</tr>
<tr>
<td>12 y</td>
<td>12-24</td>
<td>65-115</td>
<td>100-120</td>
</tr>
<tr>
<td>&gt;14 y</td>
<td>12-24</td>
<td>60-110</td>
<td>100-120</td>
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Meningococcal Meningitis and Sepsis
Wall chart
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