Necrotizing Enterocolitis (NEC)

1. Start empiric antibiotics.
2. CBC with diff, blood culture, UA, U/Cx, CRP, BMP, blood gas.
3. Consider LP.
4. 2V Abdominal XR; consider lateral decubitus to evaluate for pneumoperitoneum.
5. Consider Abdominal U/S in cases of recurrent inconclusive findings.

Suspected NEC

- Start empiric antibiotics.
- CBC with diff, blood culture, UA, U/Cx, CRP, BMP, blood gas.
- Consider LP.
- 2V Abdominal XR; consider lateral decubitus to evaluate for pneumoperitoneum.
- Consider Abdominal U/S in cases of recurrent inconclusive findings.

Abnormal Labs?

- Make infant NPO
- Place relogle to LIS
- Follow serial imaging Q6 – 12 hours

If Late Onset Sepsis is suspected, see LOS Pathway

Bell Stage I

Discontinue antibiotics after 48 hours if cultures remain negative and infant has clinically improved with no ongoing concerns for NEC

Bell Stage II (A or B)

- Continue cefepime/metronidazole or switch to piperacillin-tazobactam monotherapy for 7 – 10 days.
- If ABX started, due to concern for late onset sepsis in addition to NEC, discontinue vancomycin after 48 hours of negative blood culture results.

Bell Stage III (A or B)

- In addition to labs, collect coagulation studies.
- Continue cefepime/metronidazole or switch to piperacillin-tazobactam monotherapy for 10 – 14 days.
- If ABX started due to concern for late onset sepsis in addition to NEC, discontinue vancomycin after 48 hours of negative blood culture results.

Abnormal Labs?

- Make infant NPO
- Place relogle to LIS
- Follow serial imaging Q6 – 12 hours
- Consult Pediatric Surgery

If Late Onset Sepsis is suspected, see LOS Pathway

Radiographic Findings?

- Make infant NPO
- Place relogle to LIS
- Follow serial imaging Q6 – 12 hours
- Consult Pediatric Surgery

If Late Onset Sepsis is suspected, see LOS Pathway

Abnormal Labs?

- Make infant NPO
- Place relogle to LIS
- Follow serial imaging Q6 – 12 hours
- Consult Pediatric Surgery

If Late Onset Sepsis is suspected, see LOS Pathway

Continue serial physical exams +/- imaging

- Q6 – 8 hours

NO

NEGATIVE

Abnormal Labs?

- Make infant NPO
- Place relogle to LIS
- Follow serial imaging Q6 – 12 hours

If Late Onset Sepsis is suspected, see LOS Pathway

YES

POSTIVE

Abnormal Labs?

- Make infant NPO
- Place relogle to LIS
- Follow serial imaging Q6 – 12 hours
- Consult Pediatric Surgery

If Late Onset Sepsis is suspected, see LOS Pathway

YES

Q6 – 12 hours

Due to increased risk of renal injury with combined use of vancomycin + piperacillin-tazobactam start vancomycin + cefepime + metronidazole, if ruling out sepsis in addition to NEC

Indications for consult:

- Portal venous air pneumoperitoneum
- Gasless abdomen in an infant with normal gas pattern previously
- Clinical decompensation refractory to medical management, and/or transfer for NEC for surgical evaluation

Therapy > 14 days may be required for some infants after discussion with Pediatric Surgery.

Refer to LOS Pathway

Disclaimer: This clinical pathway is provided as a general guideline for use by Licensed Independent Provider’s (LIP) in planning care and treatment of patients. It is not intended to be and does not establish a standard of care. Each patient’s care is individualized according to specific needs.
# Modified Bell Stage Criteria for NEC

<table>
<thead>
<tr>
<th>Stage</th>
<th>Classification of NEC</th>
<th>Systemic Signs</th>
<th>Abdominal Signs</th>
<th>Radiographic Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>Suspected</td>
<td>Temperature instability, apnea, bradycardia, lethargy</td>
<td>Gastric retention, abdominal distention, emesis, heme-positive stool</td>
<td>Normal or mild intestinal dilation, mild ileus</td>
</tr>
<tr>
<td>IB</td>
<td>Suspected</td>
<td>Same as above</td>
<td>Grossly bloody stool</td>
<td>Same as above</td>
</tr>
<tr>
<td>IIA</td>
<td>Definite, mildly ill</td>
<td>Same as above</td>
<td>Same as above, plus absent bowel sounds with or without abdominal tenderness cellulitis or right lower quadrant mass</td>
<td>Intestinal dilation, ileus, pneumatosis intestinalis</td>
</tr>
<tr>
<td>IIB</td>
<td>Definite, moderately ill</td>
<td>Same as above, plus mild metabolic acidosis and thrombocytopenia</td>
<td>Same as above, plus signs of peritonitis, marked tenderness, and abdominal distention</td>
<td>Same as IIA, plus ascites</td>
</tr>
<tr>
<td>IIIA</td>
<td>Advanced, severely ill, intact bowel</td>
<td>Same as IIB, plus hypotension, bradycardia, combined respiratory and metabolic acidosis, DIC, and neutropenia</td>
<td>Same as IIIA</td>
<td>Same as IIA, plus ascites</td>
</tr>
<tr>
<td>IIIB</td>
<td>Advanced, severely ill, perforated bowel</td>
<td>Same as IIIA</td>
<td>Same as above, plus pneumoperitoneum</td>
<td></td>
</tr>
</tbody>
</table>

DIC: disseminated intravascular coagulation.

Metrics