**GUIDELINE INCLUSION CRITERIA**

- IV Vancomycin Order

**Vancomycin Infusion Time**

<table>
<thead>
<tr>
<th>Vancomycin Dose</th>
<th>Infusion Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 1000 mg</td>
<td>1 hour</td>
</tr>
<tr>
<td>&gt; 1000 mg</td>
<td>2 hours</td>
</tr>
</tbody>
</table>

**Patient history of RMS?**

- YES
  - Collect the following information:
    - Onset of prior RMS
    - RMS Severity Score
    - Infusion time
    - Medication(s) used to treat RMS
  - Notify provider
    - Order Diphenhydramine 1 mg/kg PO/IV: Give prior to each Vancomycin dose
    - MAX: 50 mg/dose not to exceed 300 mg a Day
    - RMS Severity Score > 4 (Severe RMS)
    - Notify provider AND Consider:
      - Order PO Diphenhydramine 1 mg/kg: (IV if unable to take PO)
      - Give prior to each Vancomycin dose
      - MAX: 50 mg/dose not to exceed 300 mg a Day
  - Document information in Allergy field located in the EHR banner bar.
    - Substance: Vancomycin
    - Reaction type: Side effect
    - Severity: Mild/Moderate/Severe (based on RMS Severity Score)
    - Comments: RMS Severity Score, Infusion time and Medication(s)

- NO
  - Continue monitoring until completion of vancomycin infusion
  - Notify provider
    - Order PO Diphenhydramine 1 mg/kg: (IV if unable to take PO)
    - Give prior to each Vancomycin dose
    - MAX: 50 mg/dose not to exceed 300 mg a Day

**Signs/Symptoms of RMS?**

- YES
  - Red Man Syndrome Treatment Pathway

- NO
  - Continue monitoring until completion of vancomycin infusion

**Vancomycin Infusion Time**

- 2 hours
  - Notify provider if Infusion Time is 1 hour

**ALERT**

- Severe Allergic Reaction / Anaphylaxis

**MANAGE OFF-PATHWAY**

- Diphenhydramine: 1 to 1.25 mg/kg/dose every 6 hours

**Red Man Syndrome Severity Score**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Points awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythema: relative % of total body surface area</td>
<td></td>
</tr>
<tr>
<td>&lt;1%</td>
<td>0</td>
</tr>
<tr>
<td>1% - 5%</td>
<td>1</td>
</tr>
<tr>
<td>5% - 10%</td>
<td>2</td>
</tr>
<tr>
<td>&gt;10%</td>
<td>3</td>
</tr>
<tr>
<td>Severity of pruritus</td>
<td></td>
</tr>
<tr>
<td>No pruritus</td>
<td>0</td>
</tr>
<tr>
<td>Mild</td>
<td>1</td>
</tr>
<tr>
<td>Moderate</td>
<td>2</td>
</tr>
<tr>
<td>Severe</td>
<td>3</td>
</tr>
<tr>
<td>RMS Severity Score</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>No reaction</td>
</tr>
<tr>
<td>1 - 2</td>
<td>Mild</td>
</tr>
<tr>
<td>3 - 4</td>
<td>Moderate</td>
</tr>
<tr>
<td>5 - 6</td>
<td>Severe</td>
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<td>3</td>
</tr>
</tbody>
</table>

RMS Severity Score

<table>
<thead>
<tr>
<th>Erythema + pruritus score</th>
<th>Reaction severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No reaction</td>
</tr>
<tr>
<td>1 - 2</td>
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</tr>
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</table>

GUIDELINE INCLUSION CRITERIA

Patient receiving Vancomycin IV infusion with signs or symptoms of Red Man Syndrome

Calculate RMS Severity Score

Infusion time 2 hours?

Yes

Patient received premedication regimen prior to dose?

No

Yes

RMS Severity Score > 4 (Severe RMS)

Notify provider

Diphenhydramine to 1 mg/kg PO/IV
Give prior to each Vancomycin dose
MAX: 50 mg/dose not to exceed 300 mg a Day
ADD Famotidine per protocol

Notify provider

Diphenhydramine to 1 mg/kg PO/IV
Give prior to each Vancomycin dose
MAX: 50 mg/dose not to exceed 300 mg a Day

Notify provider

Order x1 PO Diphenhydramine 1 mg/kg:
(IV if unable to take PO)
MAX: 50 mg/dose not to exceed 300 mg a Day

No resolution

Alert: Severe Allergic Reaction / Anaphylaxis

MANAGE OFF-PATHWAY

Diphenhydramine: 1 to 1.25 mg/kg/dose every 6 hours

Yes

RMS Severity Score > 4 (Severe RMS)

Notify provider

Order x1 PO Diphenhydramine 1 mg/kg:
(IV if unable to take PO)
MAX: 50 mg/dose not to exceed 300 mg a Day

No resolution OR worsening of signs and symptoms of RMS

Manage Off-Pathway

Vancomycin Infusion Complete

Nurse documents in EHR allergies field:
- Substance: vancomycin
- Reaction type: side effect
- Severity: Choose mild, moderate, or severe based on RMS score
- Comments: RMS Severity Score

Nursing flowsheet:
Ad Hoc -> Pediatrics SFH -> Clinical Event Medical Status Change

Legal Disclaimer
# Red Man Syndrome Medications

## Evidence Based Outcome Center

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Max dose</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenhydramine (Do not exceed 300 mg/day from all sources)</td>
<td>0.5 mg/kg/dose (for problematic side effects like sedation)</td>
<td>50 mg/dose</td>
<td>PO: 60-90 minutes prior to vancomycin IV: 0-15 minutes prior to vancomycin</td>
</tr>
<tr>
<td></td>
<td>1 mg/kg/dose</td>
<td>50 mg/dose</td>
<td></td>
</tr>
<tr>
<td>Famotidine</td>
<td>Per protocol</td>
<td>20 mg/dose</td>
<td></td>
</tr>
</tbody>
</table>

May administer IV if unable to take PO

For questions concerning this pathway, [Click Here]

Last Updated April 10, 2019
Red Man Syndrome
Signs, Symptoms, and Severity
Evidence Based Outcome Center

**Red Man Syndrome Signs and Symptoms**
Development of any of the following:
- Erythematous rash of the face, neck, and upper torso,
- Diffuse burning sensation/itching with generalized discomfort
- Agitation
- Anxiety

Although RMS is generally mild, more severe symptoms include:
- Hypotension
- Chest pain
- Dyspnea
- Dizziness
- Headache
- Chills
- Fever
- Angioedema
- Cardiovascular collapse

**Patients at greatest risk of Red Man Syndrome**
- Patients with a previous history of RMS (Subsequent doses may trigger less severe reaction)
- Vancomycin doses > 10 mg/kg or at concentrations > 5 mg/mL
- Prolonged durations of vancomycin therapy (> 7 days)
- Patients > 2 years of age

**Red Man Syndrome vs. Anaphylactic Reaction**

<table>
<thead>
<tr>
<th>Red Man Syndrome (RMS)</th>
<th>Anaphylactic Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occurs anywhere from 15-30 minutes into the infusion to after the infusion has stopped. RMS generally subsides within 30 minutes of infusion discontinuation, whereas severe anaphylactic reactions generally do not</td>
<td>Anaphylactic reactions to IV medications generally occur immediately and can progress rapidly. Symptoms include hives, airway swelling, respiratory distress, and diffuse erythema (vs localized to upper body for RMS)</td>
</tr>
</tbody>
</table>

**Red Man Syndrome management tips**
- Mild RMS often does not need infusion time changes or premedication. Counseling is sufficient.
- All patients should be assessed for hemodynamic stability if RMS occurs.
- Consult pharmacy if infusion times >2 hours are needed.
- Persistent RMS may warrant desensitization or alternative therapy.

For questions concerning this pathway, [Click Here]

Last Updated April 10, 2019
Red Man Syndrome
Executive Summary
Evidence Based Outcome Center

Revision History
Date Approved: April 2, 2018
Review History: April 10, 2019
Next Review Date: April 10, 2022

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Recommendations
Practice recommendations were directed by the existing evidence and consensus amongst the content experts. Patient and family preferences were included when possible.

Approval Process
EBOC guidelines are reviewed by DCMC content experts, the EBOC committee, and are subject to a hospital wide review prior to implementation. Recommendations are reviewed and adjusted based on local expertise.

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Last Updated April 10, 2019
References

Evidence Based Outcome Center


