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Vancomycin Flushing Syndrome Syndrome Prevention Pathway

Evidence Based Outcome Center

GUIDELINE INCLUSION CRITERIA

IV Vancomycin Order

Patient history of RMS?

YES

Collect the following information:
- Onset of prior RMS
- RMS Severity Score
- Infusion time
- Medication(s) used to treat RMS

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

Vancomycin Infusion Time

Vancomycin Dose	Infusion Time
≤1000 mg	1 hour
>1000 mg	2 hours

Vancomycin Infusion Time

2 hours
(Notify Provider if Infusion Time is 1 hour)

RMS Severity Score > 4
(Severe RMS)

YES

NO

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

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

Continue monitoring until completion of vancomycin infusion

NO

Signs/Symptoms of RMS?

YES

Vancomycin Flushing Syndrome Treatment Pathway

!

ALERT

Severe Allergic Reaction / Anaphylaxis

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

Vancomycin Flushing Syndrome Severity Score

Characteristics	
Erythema: relative % of total body surface area	**Points awarded**
<1%	0
1% - 5%	1
5% - 10%	2
>10%	3
Severity of pruritus	
No pruritus	0
Mild	1
Moderate	2
Severe	3
RMS Severity Score	
Erythema + pruritis score	**Reaction severity**
0	No reaction
1 - 2	Mild
3 - 4	Moderate
5 - 6	Severe

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Last Updated April 10, 2019

Vancomycin Flushing Syndrome Treatment Pathway

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Vancomycin Flushing Syndrome Severity Score

Characteristics	
Erythema: relative % of total body surface area	**Points awarded**
<1%	0
1% - 5%	1
5% - 10%	2
>10%	3
Severity of pruritus	
No pruritus	0
Mild	1
Moderate	2
Severe	3

RMS Severity Score	
Erythema + pruritis score	**Reaction severity**
0	No reaction
1 - 2	Mild
3 - 4	Moderate
5 - 6	Severe

GUIDELINE INCLUSION CRITERIA

Patient receiving Vancomycin IV infusion with signs or symptoms of Vancomycin Flushing Syndrome

! ALERT

Severe Allergic Reaction / Anaphylaxis

MANAGE OFF-PATHWAY

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

Calculate RMS Severity Score

Patient on IV Diphenhydramine 1 mg/kg **AND** IV Famotidine

NO

YES

Consider alternative antibiotic therapy
Manage Off-Pathway

Infusion time 2 hours?

NO

Change Vancomycin to 2 hour infusion

YES

Patient received premedication regimen prior to dose?

NO

YES

RMS Severity Score > 4 (Severe RMS)

YES

NO

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

RMS Severity Score > 4 (Severe RMS)

YES/NO

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

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

Continue monitoring until completion of vancomycin infusion

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

No resolution **OR** worsening of signs and symptoms of RMS

YES

NO

Vancomycin Infusion Complete
Manage Off-Pathway

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Premedication Regimens

Medication	Dose	Max dose	Timing
Diphenhydramine (Do not exceed 300 mg/day from all sources)	0.5 mg/kg/dose (for problematic side effects like sedation)	50 mg/dose	PO: 60-90 minutes prior to vancomycin IV: 0-15 minutes prior to vancomycin
	1 mg/kg/dose	50 mg/dose	
Famotidine	Per protocol	20 mg/dose	
May administer IV if unable to take PO			

Vancomycin Flushing Syndrome

Signs, Symptoms, and Severity

Evidence Based Outcome Center

Vancomycin Flushing 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 Vancomycin Flushing 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

Vancomycin Flushing Syndrome vs. Anaphylactic Reaction

RMS	Anaphylactic reaction
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	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)

Vancomycin Flushing 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.

Vancomycin Flushing 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

Redman Syndrome EBOC Team:
Kathryn Merkel, PharmD
Ronda Machen, PharmD
Lisa Juhl, PharmD
Sam Vogel, PharmD
Raquel Limon, RN
Patrick Boswell
Frank James, MBA

EBOC Committee:
Sarmistha Hauger, MD
Terry Stanley, DNP, RN, NE-BC
Deb Brown, RN
Sujit Iyer, MD
Tory Meyer, MD
Nilda Garcia, MD
Meena Iyer, MD
Michael Auth, DO
Jorge Ganem, MD

5/17/2021: Changed Name from Red Man Syndrome to Vancomycin Flushing Syndrome.

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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