

Aim: To standardize the evaluation and management of patients who develop a reaction to intravenous iron infusion.

During or within 30 minutes following the completion of an intravenous iron test dose or infusion, patient presents with signs and symptoms of an infusion-related reaction to iron* ([Note 1](#)). **Stop infusion and assess**

MILD HYPERSENSITIVITY REACTION*

Symptoms: Slight chest tightness, transient facial flushing, itching, urticaria, headache, dizziness, febrile, nausea or diarrhea, myalgia or arthralgia, back pain/pressure, infusion-related or generalized pain, metallic taste.

Management:

1. Stop infusion
2. Obtain vital signs (BP, pulse, respiratory rate, O2 sat, and temp) immediately
3. Alert on call provider
4. Do not administer diphenhydramine, methylprednisolone, or epinephrine
5. Monitor vital signs (listed above) every 5 minutes for 15 minutes, then move onto [Page 2](#)

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MODERATE HYPERSENSITIVITY REACTION

Symptoms: Worsening of mild reaction symptoms or isolated and mild shortness of breath, flushing (non-facial), transient cough, isolated hypotension, or tachycardia.

Management:

1. Stop infusion
2. Obtain vital signs (BP, pulse, respiratory rate, O2 sat, and temp) immediately
3. Alert on call provider
4. Do not administer diphenhydramine or epinephrine
5. Give oxygen if hypoxia
6. If hypotensive, recline patient onto back and give NS bolus of 20 mL/kg x1
7. Consider methylprednisolone 1 mg/kg IV Push
8. Consider famotidine IV (0.5 mg/kg; max 20 mg) once
9. Monitor vital signs (listed above) every 5 minutes for 15 minutes, then move onto [Page 2](#)

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SEVERE HYPERSENSITIVITY REACTION/ANAPHYLAXIS

Symptoms: Sudden onset and rapid intensification of symptoms, hypotension with any other symptoms, loss of consciousness, stridor, cyanosis, angioedema of tongue and/or airway, 2+ organ system involvement consistent with anaphylaxis (CV, skin, Resp, GI)

***This is not CARPA**

Management:

1. Stop infusion
2. Initiate rapid response or code blue and alert attending provider.
3. Refer to [anaphylaxis guideline](#) for treatment with epinephrine IM. Do NOT give IV.
4. Provider to document the iron product (i.e., iron dextran) as a medication **allergy** within the patient's allergy list. Include a brief statement of what occurred and what interventions were required to address the patient's symptoms.

INCLUSION CRITERIA

- Signs and symptoms of an infusion-related reaction following the administration of iron dextran, iron sucrose, or ferric carboxymaltose.
- Age >1 month and <21 years old

EXCLUSION CRITERIA

- Anaphylaxis symptoms clearly attributed to other cause. In this case, refer to: [Children's Anaphylaxis Clinical Guideline](#)

*CARPA (complement activation-related pseudo-allergy): a non-IgE mediated hypersensitivity reaction that is non-life threatening and is due to labile free iron that is infusion rate dependent. This is not a true allergic reaction.

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MILD HYPERSENSITIVITY REACTION

MODERATE HYPERSENSITIVITY REACTION

SEVERE HYPERSENSITIVITY REACTION/ANAPHYLAXIS

Did symptoms improve in the 15 minutes after initial intervention(s)?

Did symptoms improve in the 15 minutes after initial intervention(s)?

No

Yes

Yes

No

Return to [Page 1](#) and upgrade level of reaction to "Moderate Hypersensitivity Reaction," implementing management recommendations for this upgraded level of reaction.

1. Monitor for return to baseline/resolution of symptoms. Discuss with patient option to restart infusion at 50% previous rate.
 - Can restart 15 min after resolution of symptoms.
2. If tolerating at 50% of the rate after 15 minutes, increase the rate to 75% of the initial rate (Initial rate multiplied by 0.75) and continue this rate for the remainder of the infusion.
 - Repeat vital signs every 30 minutes and observe for 60 minutes after infusion complete.
3. Stop if symptoms recur.
4. Provider to document the iron product (i.e., iron dextran) as a medication **intolerance** within the patient's allergy list. Include a brief statement of what occurred, whether intervention was needed, and whether the patient was able to complete the infusion after resolution of symptoms.

Are symptoms persistent or worsening?

Symptoms persistent:

1. Treat individual symptoms:
 - 2nd Generation Antihistamine, i.e., cetirizine or loratadine, for dermatologic symptoms
 - May consider IV diphenhydramine if enteral route is not an option
 - Famotidine for gastrointestinal symptoms
2. Do not restart IV iron
3. Repeat vital signs every 30 minutes and observe for 1-4 hours after infusion was stopped
4. Provider to document the iron product (i.e., iron dextran) as a medication **intolerance** within the patient's allergy list. Include a brief statement of what occurred and what interventions were required to address the patient's symptoms.

Symptoms worsening:

Return to [Page 1](#) and upgrade level of reaction to "Severe Hypersensitivity Reaction/Anaphylaxis," implementing management recommendations for this upgraded level of reaction.

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NOTE 1

1. In the case that a patient has a **SEVERE HYPERSENSITIVITY REACTION/ANAPHYLAXIS** reaction, regardless of whether it was during an iron dextran test dose or a full dose, refer to the [Children's Anaphylaxis Clinical Guideline](#)
 - Specifically in the case that this occurs during the test dose, the test dose should be discontinued if it is not yet completed and no additional dose(s) of iron dextran should be administered.

REFERENCES

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