Management of IV Iron Infusion Reactions

Patient counselling
Refer to patient pamphlet **(PL-1354)**

Risk assessment
Does the patient have history of previous reaction to IV iron, multiple drug allergies, severe asthma or mastocytosis?

YES → **Consider pre-treatment** with cetirizine

NO

Refer to order (NS_OSIIA) and initiate infusion per IWK parenteral monograph
Slower infusion rates are associated with less infusion reactions

Observe the patient closely for the first 15 minutes of infusion
(Immediate infusion reactions can occur within the first few minutes of infusion)

Acute signs and/or symptoms of reaction DURING infusion?

No → **Upon infusion completion,** educate patient on management of delayed reactions (flu-like symptoms, myalgia, arthralgia, fever, etc.) and use of **acetaminophen,** as needed

Seek medical attention if symptoms do not resolve

Yes → STOP INFUSION

NOTIFY RESIDENT OR STAFF PHYSICIAN ON CALL

Perform physical assessment of patient
(BP, pulse, O_2 sat, temperature)
CHANGE IV line to 0.9% NaCl to keep vein open

Reaction Management

Fishbane Reaction
- Flushing
- Chest tightness sometimes with dyspnea
- Back pain
- Joint pain

Hold infusion for 15 minutes

Re-start Infusion at initial rate
(at LEAST **15 minutes** after symptoms resolve)
- Reassure patient
- Symptoms often resolve and do NOT return when infusion is re-started

If symptoms return → **STOP Infusion**

Isolated symptoms (e.g.)
(Note: patients may experience more than one)
- Pruritis/ Urticaria
- Rash
- Mild changes in BP
- Tachycardia
- Nausea
- Headache

Hold infusion for 15 minutes

Improvement in signs and symptoms?

YES → **Re-start Infusion at initial rate**

NO

Improving:
Start treatment of isolated symptoms

Not improving:
Re-evaluate and rule out anaphylaxis

REFER TO IWK ANAPHYLAXIS ORDER SET (IWKANRT)

Anaphylaxis
- Sudden onset and rapid intensification of symptoms
- Loss of consciousness
- Hypotension (a drop in SBP more than 30mmHg from baseline, or SBP less than 90mmHg
- Angioedema of tongue and/or airway
- Involvement of **TWO or more** organ systems:

1. Cardiovascular (hypotension, chest pain)
2. Skin (generalized urticaria, non-airway angioedema)
3. Respiratory (stridor, bronchospasm)
4. Gastrointestinal symptoms (vomiting, abdominal pain)

REFER TO IWK ANAPHYLAXIS ORDER SET (IWKANRT)

Nausea/ vomiting
- Consider antiemetics (e.g. dimenhydrinate, ondansetron)

Urticaria/ itching
- Consider non-sedating antihistamines (e.g. cetirizine PO or famotidine IV)

Mild hypotension
- Consider IV bolus NaCl 0.9%

Inform the patient about DELAYED reactions. Can occur several hours to days after administration.
Symptoms usually last 2-4 days or resolve following the use of simple analgesics
Symptoms may include:
- Fatigue
- Myalgia
- Arthralgia
- Fever

Adapted from: Achebe and DeLoughery (2020)

Additional Information

Hypersensitivity versus non-allergic reaction[1,2,3,5]

Hypersensitivity reactions to intravenous iron are rare. Anaphylaxis due to intravenous iron is a life-threatening, IgE-mediated hypersensitivity reaction. Other types of hypersensitivity reactions include isolated symptoms (e.g., urticaria) and delayed reactions. Some patients may also experience a non-allergic infusion reaction commonly known as the Fishbane reaction. This type of complement activated related pseudo-allergy (CARPA) is thought to be caused by excessive free iron in the blood stream or due to the carbohydrate shell of the IV iron formulation. Fishbane reactions are non-life threatening and self-resolve after stopping the iron infusion.

Fetal monitoring

Fetal monitoring during or following IV iron infusion is generally not required.

In the event of a severe maternal hypersensitivity reaction (e.g., anaphylaxis), fetal heart rate monitoring is recommended due to the risk of fetal bradycardia.

Re-challenging after reaction

To reduce the risk of another reaction, patients with a previous non-life-threatening reaction may be re-challenged with one or more of the following strategies: slower infusion rate, lower dose, different formulation, and/or pre-medication with a non-sedating oral antihistamine (may be considered in patients who previously experienced isolated mild urticaria, though benefit is unclear).

Patients with previous life-threatening reaction should be referred to an allergist or immunologist if re-challenge is being considered.

Test doses

Test doses are not recommended

References

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