

Clinical and Practice Considerations in the Management of Iron Deficiency Anemia (IDA)

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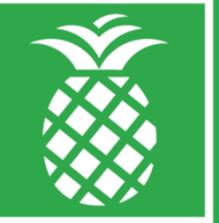




Learning Objectives

- Review iron deficiency anemia
- Compare clinical considerations of various iron replacement products
- Compare practice considerations with various iron replacement products





Iron Deficiency Anemia (IDA)

- Reduction in circulating red blood cells (RBC)
- Insufficient utilizable body of iron stores
- Several etiologies
- Impacting ~ 5 million patients in U.S.
- Reduction in patient quality of life (QOL)

Prevalence:

- Vary by age, race, gender
- 2% in adult men
- 9-12% non-Hispanic white women
- 20% in black & Mexican-American women



Etiology of IDA

- Chemotherapy
- Blood loss after surgery
- Malnutrition
- Malabsorption

Contributing Factors:

- Hemolysis
- Hemophagocytic syndromes
- CKD
- ChT or RT-induced myelosuppression
- Bone Marrow Infiltration
- ESA
- Immuno-Inflammation





Absolute Iron Deficiency

Depletion of total body iron stores due to inadequate iron intake or blood loss

Functional Iron Deficiency

Total iron body stores are normal or increased, but iron cannot be metabolized





Iron Deficiency Anemia

Symptomatology:

- Chest pain, fast heartbeat, or shortness of breath
- Headache, dizziness, or lightheadedness
- Pica
- Cold hands and feet
- Brittle nails
- Weakness
- Extreme fatigue

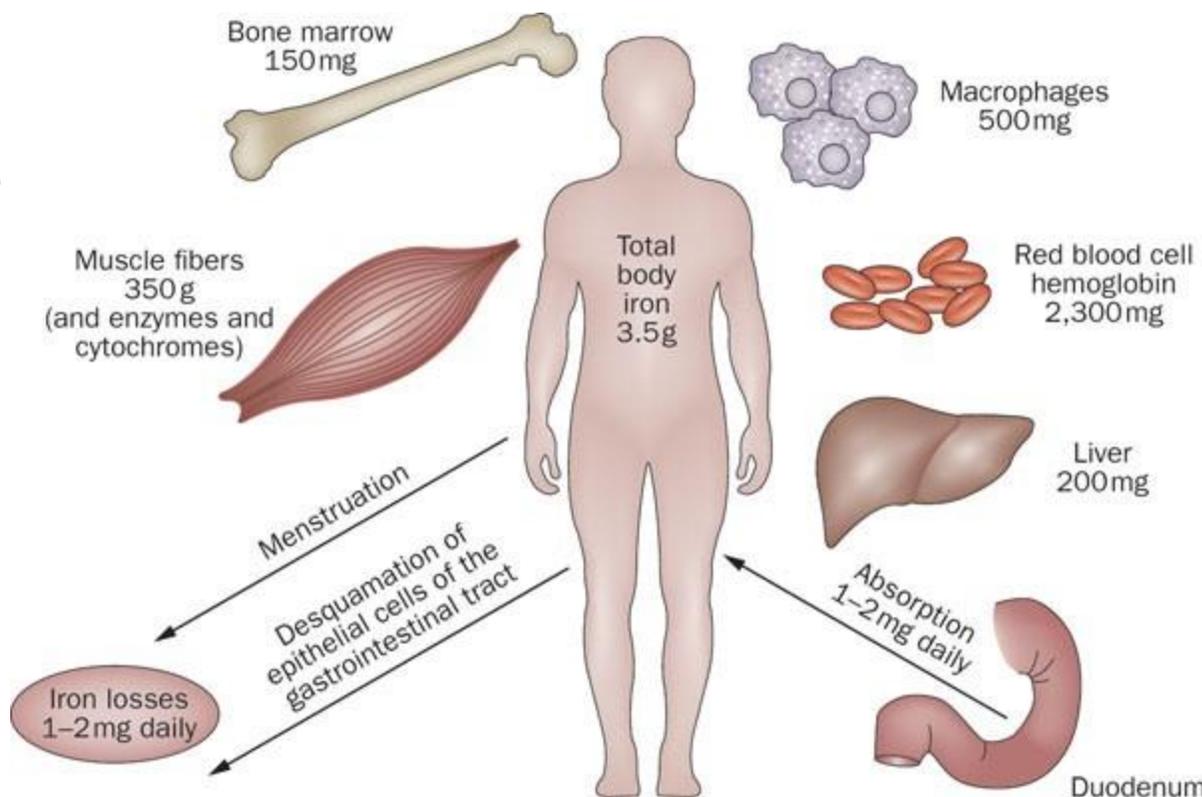




Iron Deficiency Anemia

Iron Homeostasis

- 1-2 mg iron is lost daily
 - Desquamation of epithelial cells of skin, GI tract, bile ducts and urinary tract
 - Menstruation
- 1-2 mg absorbed in duodenum





IV Iron Therapy Evolution in the U.S.

| | |
|------|------------------------------------|
| 1932 | Iron hydroxide |
| 1947 | Iron saccharide |
| 1954 | High molecular weight iron dextran |
| 1991 | Low molecular weight iron dextran |
| 1996 | HMW-ID |
| 1999 | Ferric gluconate |
| 2000 | Iron sucrose |
| 2009 | Ferumoxytol |
| 2013 | Ferric carboxymaltose |
| 2020 | Ferric derisomaltose |





Safety Considerations for IV Iron Therapy

Pharmacist Consensus Statement

A panel of 12 pharmacists reviewed evidence regarding IV iron-associated AEs, including:

- 27 systemic reviews and review articles
- 35 RCTs, case reports & case series





Iron Deficiency Anemia Pharmacist Safety Consensus Statement

Hypersensitivity Reactions / Infusion Related Reactions

| | IgE Mediated Reactions | CARPA Reactions |
|-------------------|---|---|
| Mechanism of HSRs | Immune memory forms the specific IgE | Non-IgE-mediated activation of the complement system |
| Exposure | Typically arises upon re-exposure to allergen | Typically arises w/ first exposure to new molecule |
| Intensity | Increases w/ repeated exposure | Decreases with repeated exposure |
| Resolution | Reaction does not cease if treatment discontinued | Spontaneous resolution when infusion is paused or stopped |

Reactions

- 1) For patients developing a mild-to-moderate Fishbane or CARPA reaction, consider rechallenging with the same product, at a slower rate, or switching with an iron product with a lower free iron load.





Iron Deficiency Anemia Pharmacist Safety Consensus Statement

Patients at Increased Risk of HSR

1) Factors that increase the likelihood of HSRs

Genetic disposition
(asthma, other
allergies)

Acquired lasting
factors
(autoimmune
diseases)

Acquired
Temporary Factors
(anxiety, rate of
infusion)

2) Factors that increase the likelihood of an adverse outcome to HSRs

Advanced age

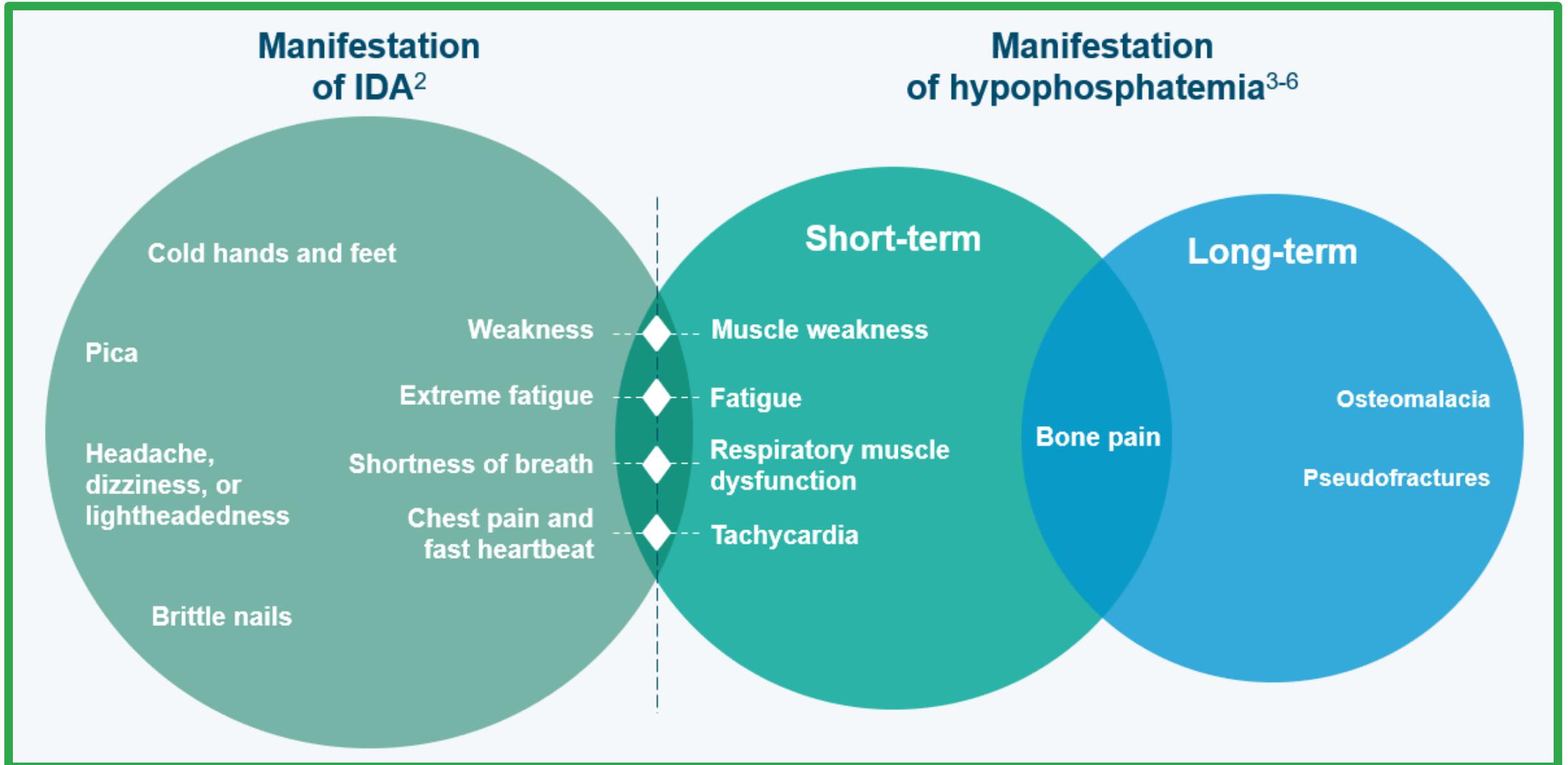
Pre-existing severe
respiratory or CVD

Use of B-blockers or
ACE inhibitors





Iron Deficiency Anemia Hypophosphatemia





Iron Deficiency Anemia Hypophosphatemia

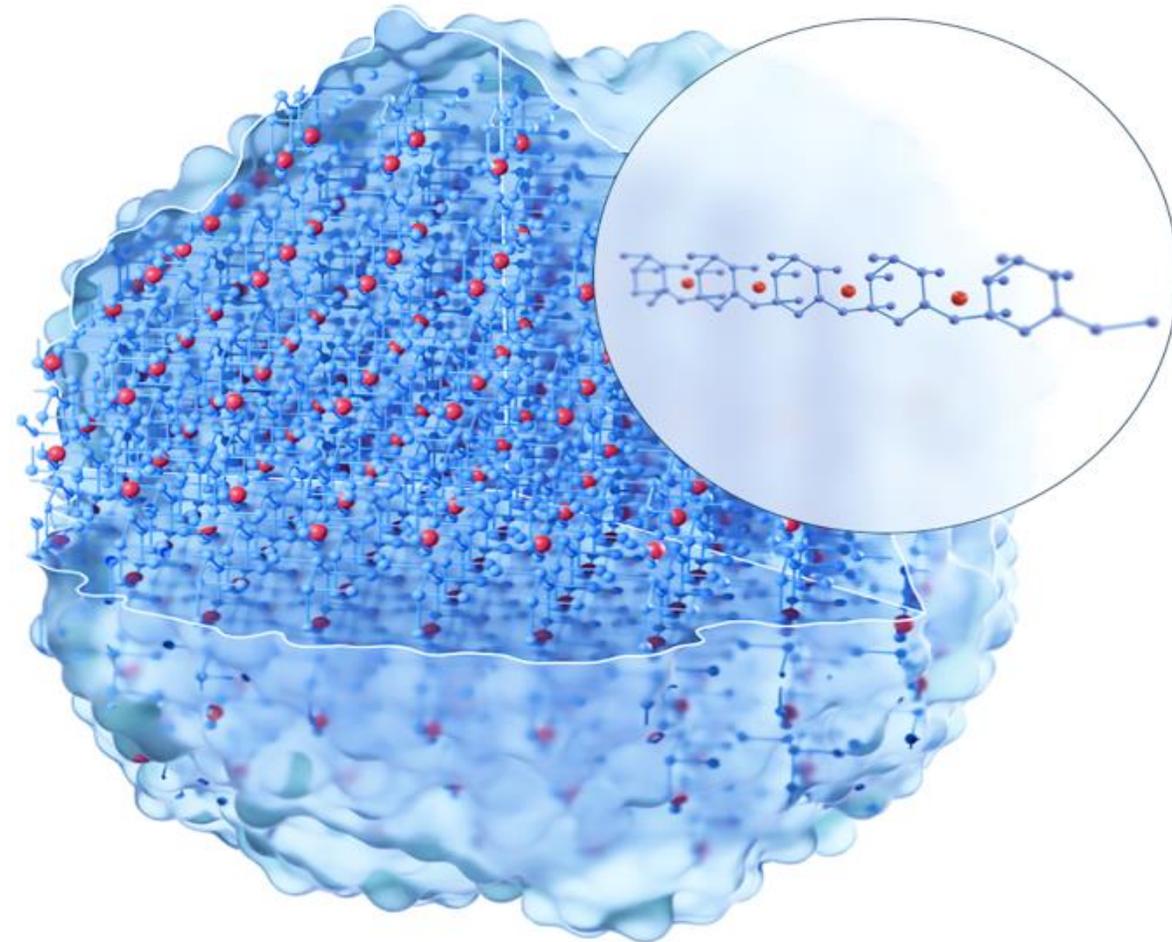
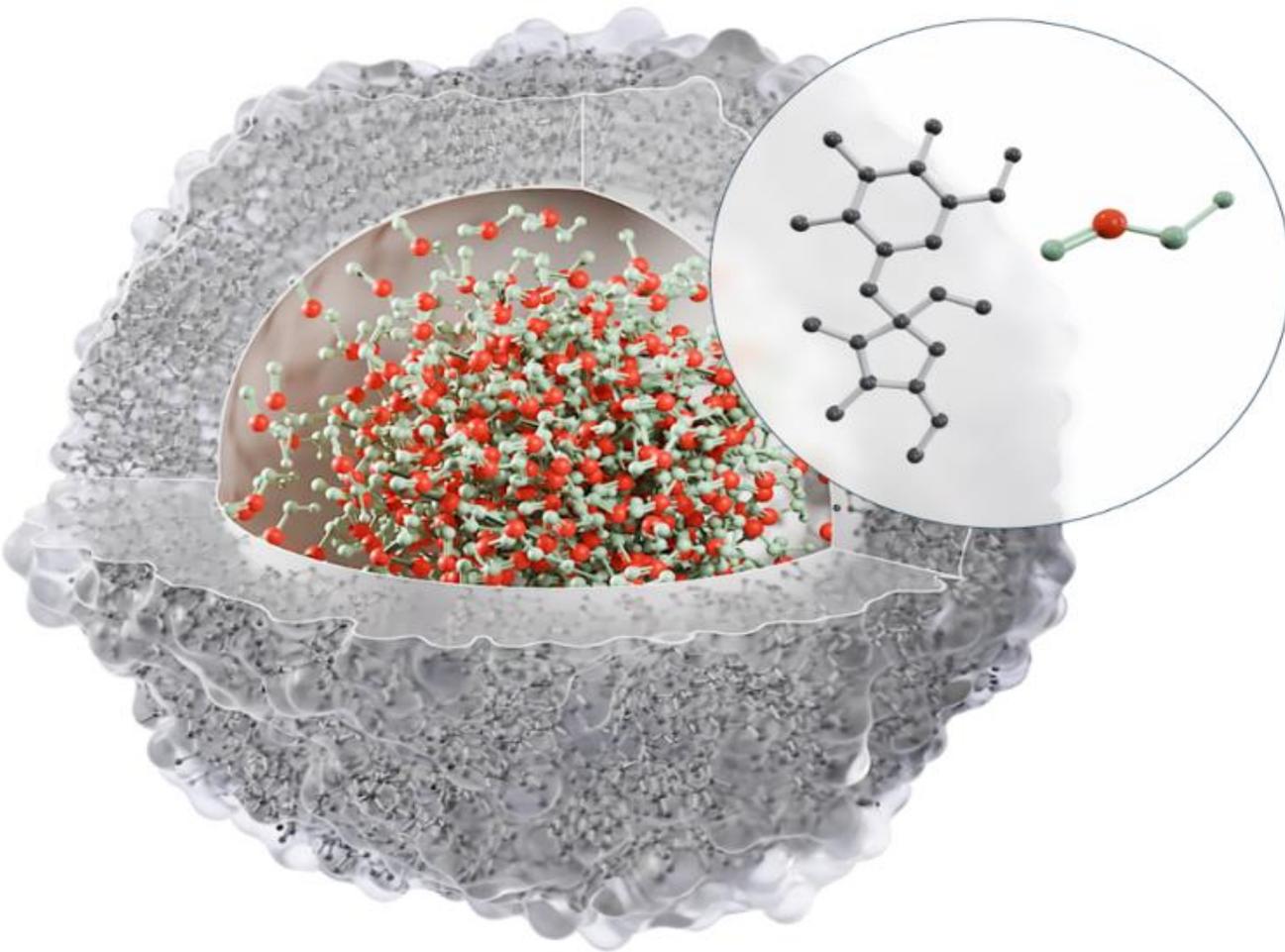
Early Detection May Prevent Severe Complications:

- 1) Hemolysis
- 2) Rhabdomyolysis
- 3) Respiratory failure
- 4) Cardiac dysfunction
- 5) Neurological impairment





IV Iron Formulations





Iron Deficiency Anemia

IV Therapy Options & Considerations

| Product | Dose | Visits | Infusion † | Test Dose | Boxed Warning |
|-----------------------|---------|---------|------------|-----------|-------------------|
| Iron Dextran | 100 mg | [] x10 | ≥ 2 mins | Yes | Yes (anaphylaxis) |
| Ferric Gluconate | 125 mg | [] x8 | ≥ 60 mins | No | No |
| Iron Sucrose | 200 mg | [] x5 | ≥ 15 mins | No | No |
| Ferumoxytol | 510 mg | [] x2 | ≥ 15 mins | No | Yes (anaphylaxis) |
| Ferric Carboxymaltose | 750 mg | [] x2 | ≥ 15 mins | No | No |
| Ferric Derisomaltose | 1000 mg | [] x1 | ≥ 20 mins | No | No |

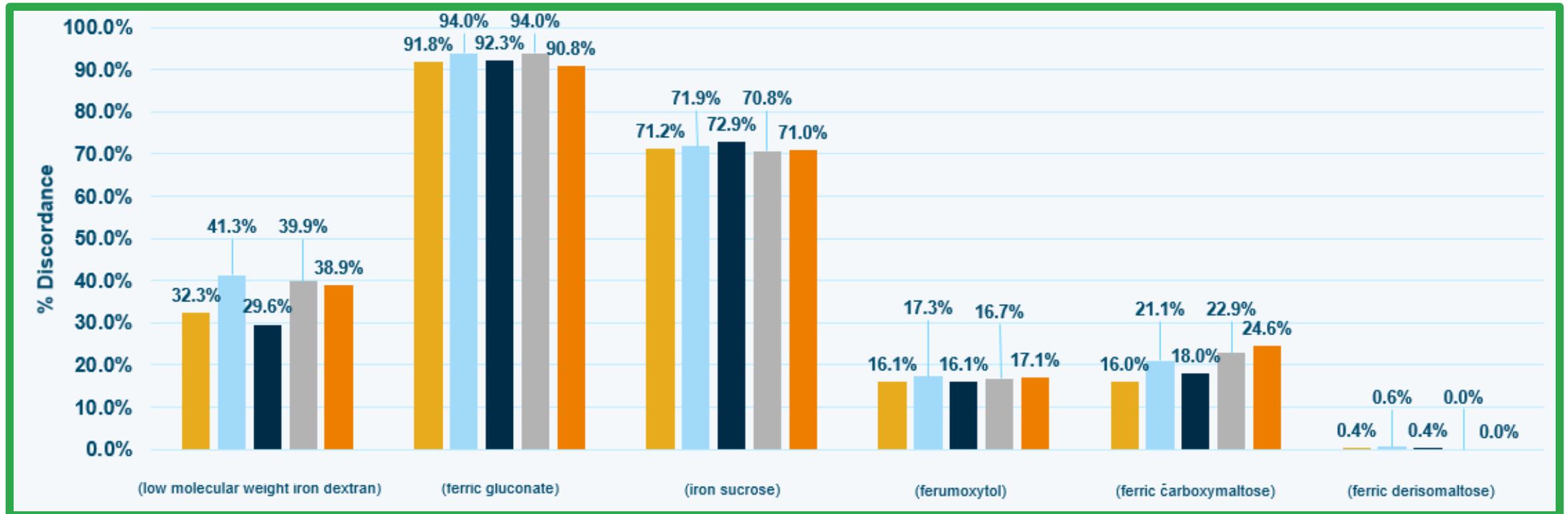




Iron Deficiency Anemia

Treatment Discordance

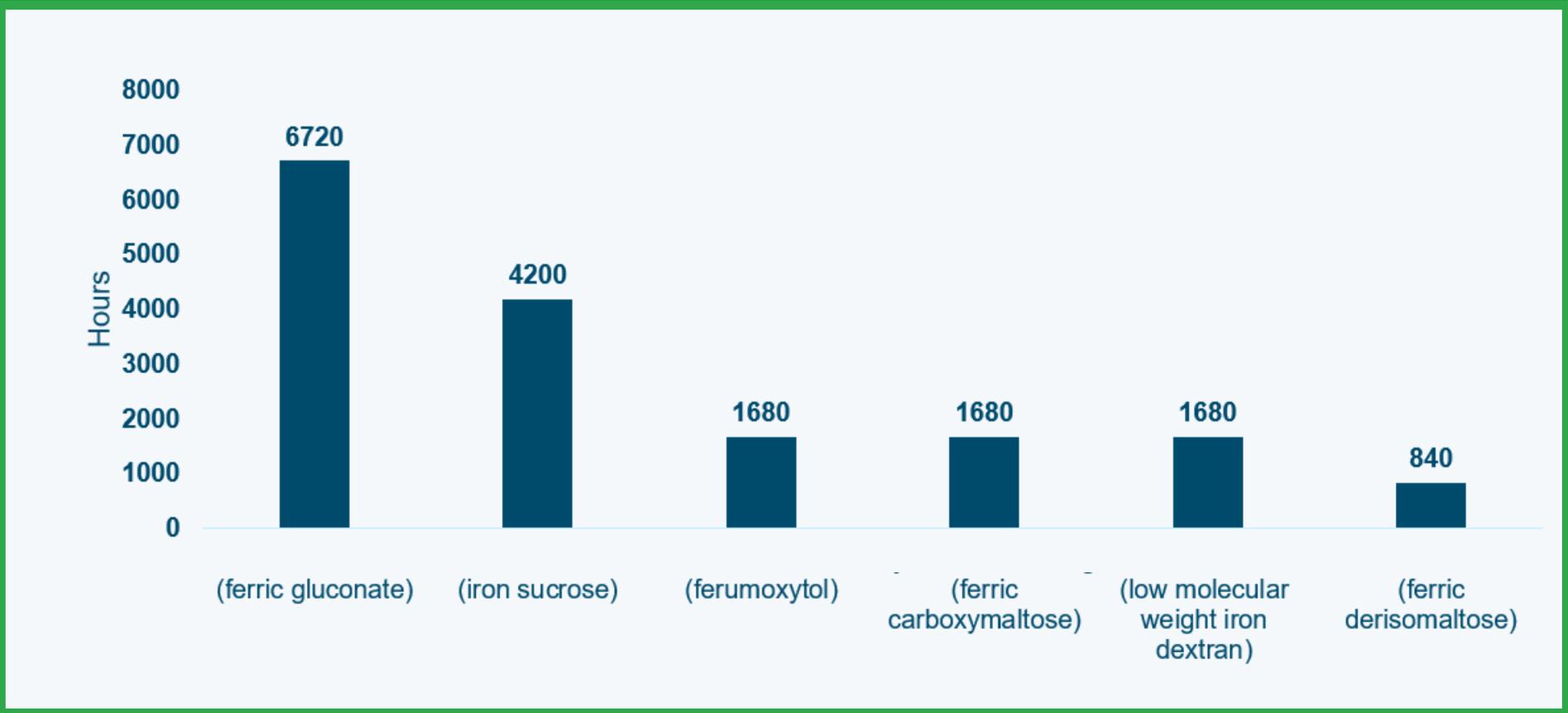
Cumulative 6-week dose of less than 1,000 mg of iron





Iron Deficiency Anemia

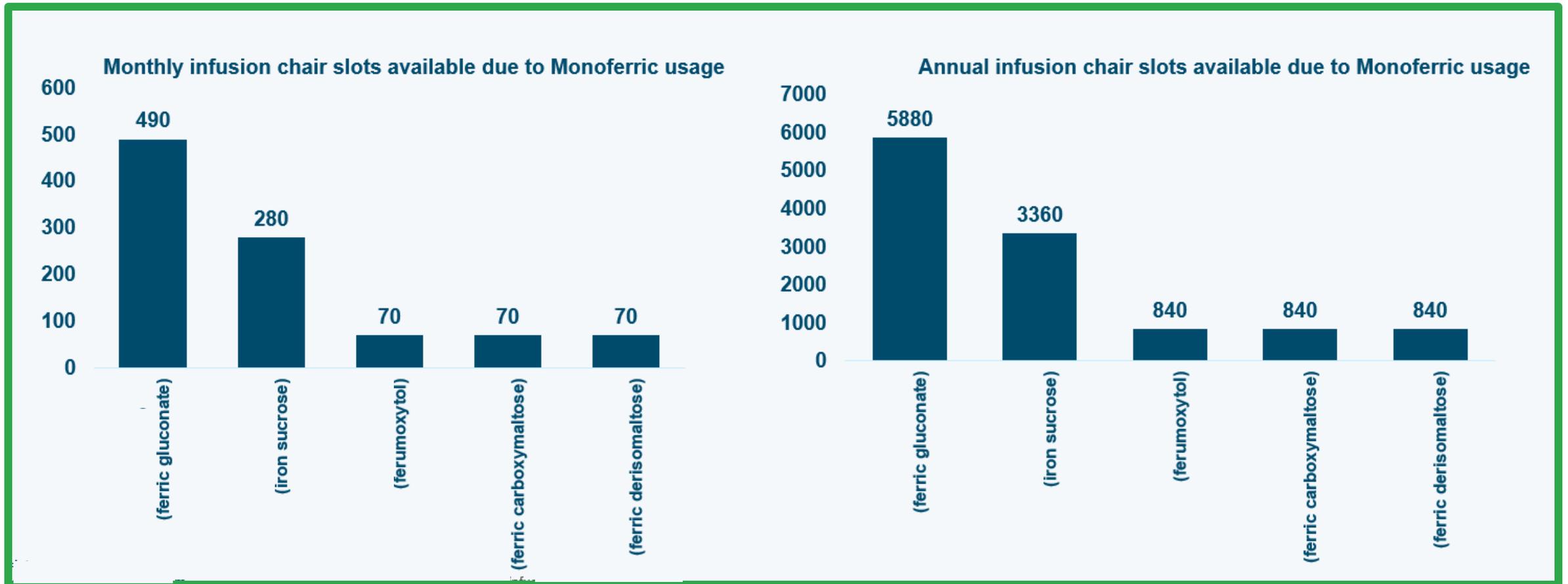
Chair Utilization by Time





Iron Deficiency Anemia

Chair Utilization by Infusion Slots





Iron Deficiency Anemia IV Therapy Options

Other Considerations

- 1) CMS payable status indicator
- 2) Health plan coverage policy and authorizations
- 3) Patient out-of-pocket responsibility
- 4) Patient Assistance Programs (PAPs)
- 5) Transportation vulnerability
- 6) Provider economics
- 7) Tool for management of infusion capacity
- 8) Patient access gaps





Iron Deficiency Anemia

Summary

- Iron deficiency anemia affects a broad patient population
- Challenges accessing benign hematology specialty
- Challenges accessing infusion services
- Important IV iron replacement safety and efficiency considerations
- Coordinated iron infusion service can leverage
 - Patient access
 - Organizational value



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Q & A



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