Single-Dose Ferric Derisomaltose had the Highest Adherence Among Intravenous Iron Therapy in a National Community Oncology Network Real-World Analysis

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BACKGROUND

Limited real-world data exist on intravenous iron (IVI) adherence in the community, as most research relies on administrative claims, which capture billed rather than ordered doses. This study compares the amount of iron ordered to that administered in clinical practice.

Iron deficiency anemia (IDA) develops when iron intake, storage, and availability are insufficient to support optimal red blood cell production.[1]

IDA affects over 5 million people in the United States, with an estimated iron deficit of ~1000 mg in affected patients, highlighting the amount needed to restore normal physiological function.[1-3]

IVI is recommended when oral iron is ineffective or poorly tolerated and is administered in two ways:[4]

- Multiple low-dose infusions (older generation)
- Less than or equal to 2 higher-dose infusions (newer generation)

Efficient iron treatment is critical, as non-adherence can lead to: [5,6]

- persistent anemia
- worsening conditions
- increased transfusion risk
- higher mortality

Real-world claims analyses show non-adherence rates ranging from 16-94% for multi-dose IVI, as captured by administrative claims data that contain billed rather than ordered doses.[7]

This study examines the discrepancy between iron orders and actual administration in clinical practice, providing insight into real-world adherence patterns.

OBJECTIVE

To evaluate treatment patterns and adherence to prescribed IVI regimens using electronic medical records (EMR).

ABBREVIATIONS

EMR – Electronic medical records
FDA – US Food and Drug Administration
IDA – Iron Deficiency Anemia
IVI – Intravenous iron
IV – Intravenous
US – United States

SCAN ME

SUPPORTED BY:
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METHODS

This retrospective study analyzed de-identified integrated EMR and claims data from a nationwide network of community oncology practices

Adult patients with an IVI infusion order in the EMR between January 2022 and December 2024 were included

Inclusion/exclusion criteria (Figure 1) were applied to identify eligible patients

followed by a random selection of

300 patients receiving
ferumoxytol
ferric carboxymaltose
ferric derisomaltose

100 patients receiving
iron sucrose
sodium ferric gluconate
iron dextran

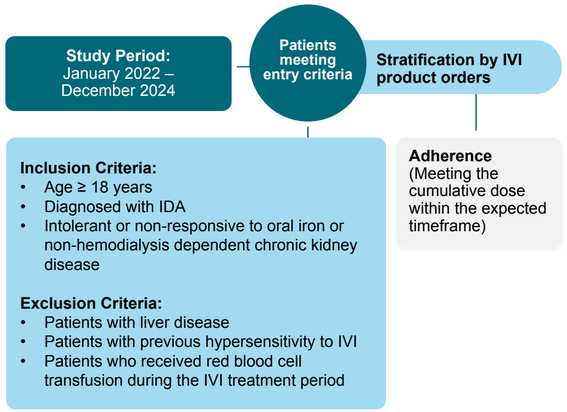
Adherence

Adherence was calculated by comparing infusion timing and total dose ordered to that administered.

A patient was considered adherent if:

The total dose (in mg) of IVI meets or exceeds the ordered amount + *the number of days to receive the regimen was less than or equal to the number of days ordered*

Figure 1. Study design



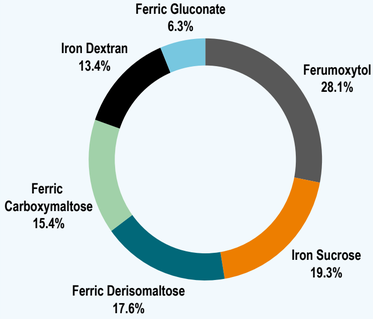
RESULTS

n=1,173 patients received 2,910 IVI regimens (Figure 2)

The mean age was **58.9** years old

Proportion of females **84.2%**

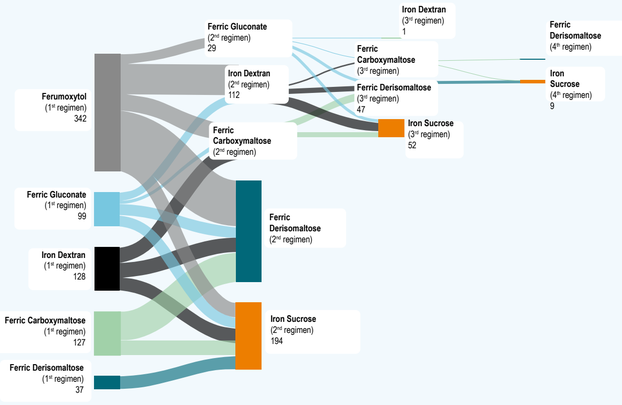
Figure 2. Ordered IVI



Of the 2,910 regimens, 77.8% had a median ordered dose of at least 1,000 mg across all products.

Nearly half of the patients had multiple regimens of the same or different IVI over the course of the study (Figure 3).

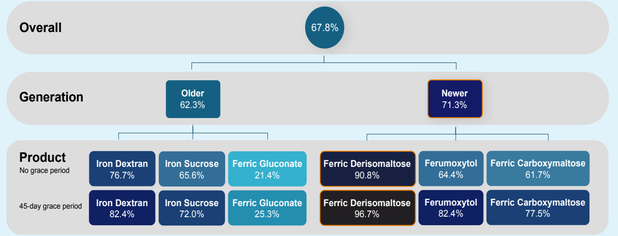
Figure 3. Treatment switching patterns



Overall adherence was 67.8%, with newer-generation IVI regimens showing a better adherence compared to older-generation (71.3% vs 62.3%) (Figure 4).

- Ferric derisomaltose had the highest adherence rate (90.8%) while ferumoxytol (64.4%) and ferric carboxymaltose (61.7%) adherence rates were closer to older-generation IVI.

Figure 4. Adherence to IVI



Among the small number of patients non-adherent to ferric derisomaltose, 89% eventually received at least 1,000 mg of iron after an average of 38 days from the order date to administration.

- Adding a grace period of 45 days improved adherence, especially for ferric derisomaltose, which reached 96.7% (Figure 4).

LIMITATIONS

The study was conducted within a network of community oncology practices, which may not fully represent IVI adherence patterns in other settings where IVI is also commonly used.

Some IV iron products were used outside FDA-approved labeling, reflecting real-world practice and potentially affecting adherence outcomes.

Applying a 30 and 45 day grace period improved adherence but may overestimate it by including delayed treatments.

CONCLUSIONS

Comparison of the total ordered vs. administered dose showed that the single-dose ferric derisomaltose had the highest adherence among IVI products, including other newer- and older-generation options.

Although the proportion of newer-generation regimens ordered was greater than older generation, the adherence rates of two newer-generation (ferumoxytol, ferric carboxymaltose) were closer to older-generation IVI.

Extending the grace period for evaluation improved adherence, likely reflecting delays related to prior authorizations as well as scheduling challenges.

Given the median ordered dose across all products, administering 1,000mg IVI as single dose and addressing delays are key to improving adherence.