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Assessment of iron sucrose use at a community-based hospital

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BACKGROUND

- According to the World Health Organization, two billion people (30% of the world's population) suffer from anemia.[1] Iron deficiency is the primary causative factor in half of these cases.
- The standard of care for iron deficiency anemia is oral iron supplementation as it is safe, effective, well tolerated, and inexpensive.[2]
- Parenteral iron therapy is more costly and may cause severe side effects, such as hypotension and anaphylaxis.[3] It is indicated as first line in patients who are unable to tolerate or absorb oral preparations, in those with unresolved bleeding, in those undergoing dialysis, and in pregnant women.
- Within our hospital system, an algorithm has been proposed to limit the first line use of intravenous (IV) iron sucrose (Venofer®) .

OBJECTIVES

1. Determine if patients treated with Venofer® as first line therapy for iron replacement met Baptist Health South Florida (BHSF)'s proposed IV iron algorithm criteria
2. Assess if patients had hemoglobin, transferrin saturation (TSAT), and ferritin levels drawn at baseline
3. Examine potential cost savings associated with proposed algorithm

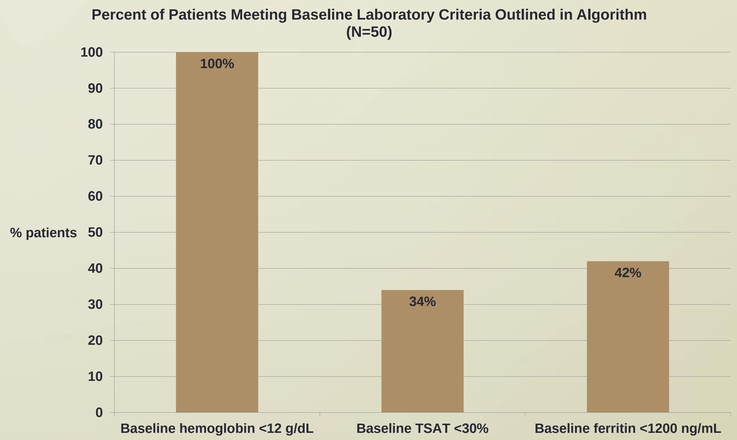
METHODOLOGY

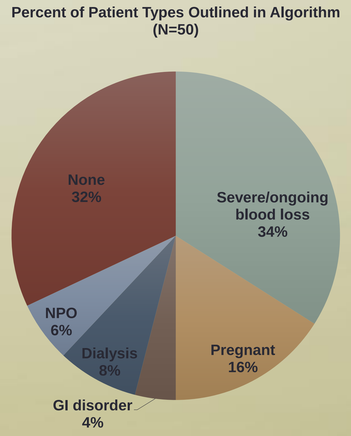
- This retrospective study was approved by the BHSF Institutional Review Board.
- An electronic report of all inpatients who received Venofer® in June 2016 was generated by our pharmacy systems specialist.
- Patients <18 years old and those who first received oral iron supplementation were excluded.
- Of the resultant records, fifty charts were chosen at random to determine if they met the following criteria outlined in BHSF's proposed algorithm:
  - Baseline hemoglobin <12 g/dL, TSAT <30%, ferritin <1200 ng/mL
  - Patient types:
    - -Dialysis
    - -Pregnant women
    - -Gastric surgery
    - -Patients with gastrointestinal (GI) disorders
    - -Patients with malabsorption syndromes
    - -Patients with severe/ongoing blood loss
    - -Patients who cannot receive oral intake (NPO)
- For patients who did not meet the above criteria, the total cost of Venofer® doses was calculated.

RESULTS

Demographics	
N=50	
Gender	
Male	21 (42%)
Female	29 (58%)
Age	
Mean (years)	58

Baseline Laboratory Parameters	
N=50	
Hemoglobin	50 (100%)
TSAT	18 (36%)
Ferritin	23 (46%)





RESULTS

Analysis of Inadequate Venofer® Therapy	
n=16 (32%)	
Total	
Doses administered	36
Milligrams administered	10,700
Potential Cost Savings	
Total cost	$3,168

DISCUSSION

- Out of 50 patients reviewed, 16 (32%) did not fall into the proposed patient types who may receive IV iron first line.
- All patients had a baseline hemoglobin level (100%), 18 (36%) had baseline TSAT values, and 23 (46%) had baseline ferritin levels.
- All baseline hemoglobin levels were <12 g/dL (100%). However, only 17 patients (34%) had baseline TSAT <30% and only 21 patients (42%) had baseline ferritin <1200 ng/mL.
- On average, inappropriate therapy lasted about 2 days.
- Based on our facility's acquisition cost of $29.61 for one 100 mg vial of Venofer®, the cost of inappropriate parenteral therapy totaled $3,168.
- Limitations: Brief study period, small sample size, evaluation of only inpatients, and retrospective data collection that depended on what was documented in the electronic medical record.

CONCLUSIONS

- The criteria outlined in our hospital system's proposed algorithm can greatly streamline the use of parenteral iron therapy.
- Since these implications translate into safe and cost effective treatment, a system wide initiative will be implemented to promote the use of oral iron supplementation.

REFERENCES

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3. VENOFER- iron sucrose injection, solution [package insert]. Shirley, NY: American Regent, Inc.; 2014.

DISCLOSURES

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

- Ada S. Jalice: Nothing to disclose
- Mercedes Frías: Nothing to disclose
- Yarelys Garcia: Nothing to disclose