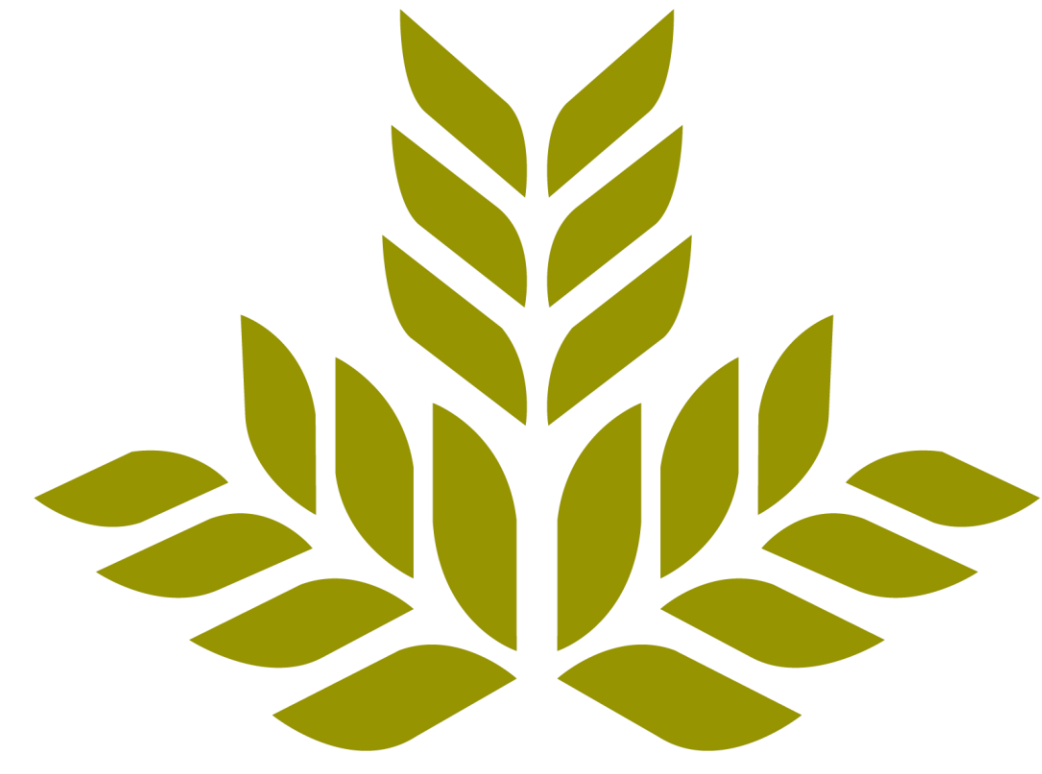


Effect of Using a Standardized Iron Regimen on Blood Transfusion Requirements in Critically-Ill, Trauma and Acute Care Surgical Patients



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Background

- Post-traumatic hemorrhage can have mortality rates up to 50% without appropriate treatment¹.
- Anemia is present in up to 90% of patients in the immediate postoperative period after major surgery often requiring blood transfusion management.
- According to the American Red Cross, 20% to 53% of critical care patients receive red blood cell transfusions, and these patients receive 2 to 3 transfusions per week^{2,3}.
- While life-saving, allogeneic blood transfusions can lead to immunomodulation and iron toxicity^{4,5}.
- The Society for the Advancement of Blood Management recommends patient blood management (PBM) to reduce the use of blood transfusions.
- Northeast Georgia Medical Center transitioned from using several intravenous iron products to implementing a standardized iron regimen of iron sucrose 1000 mg intravenously over a week in trauma patients.
- Evaluating the implementation of this standardized iron regimen could show that this protocol contributes evidence that this can be used as a PBM tool as it may lower the number of blood transfusions required per patient.

Iron Sucrose Panel (Single Response)

ferric gluconate (FERRLECIT) 125mg = iron sucrose (VENOFER) 100mg

Non HD or Trauma (Single Response)

Iron Sucrose Infusion **"Followed by" Linked Panel**

Iron Sucrose Infusion 300 mg, intravenous, Every 48 hours, Routine, For 2 Doses

Iron Sucrose Infusion 200 mg, intravenous, Every 48 hours, Routine, For 2 Doses

HD

Iron Sucrose Infusion 200 mg, intravenous, 3 times weekly, Routine Give with each HD session

Objective

The objective of this study is to determine the extent that iron supplementation affects the number of blood transfusions in critically-ill trauma and acute care surgical patients.

Disclosure

The authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities

Michelle Vu: Nothing to disclose, Leslie Roebuck: Nothing to disclose, Jason VanLandingham: Nothing to disclose

Outcome Measures

Primary Endpoint

- To evaluate the number of blood transfusions in subjects who received a standardized iron regimen versus those who received a non-standardized iron regimen

Secondary Endpoint

- To quantify the theoretical cost avoidance in using a standardized iron regimen in this study population

Methods

Inclusion Criteria

- Age ≥ 18 years
- Admission to surgical trauma intensive care unit (ICU)
- Administration of at least one dose of intravenous iron supplementation during ICU stay

Exclusion Criteria

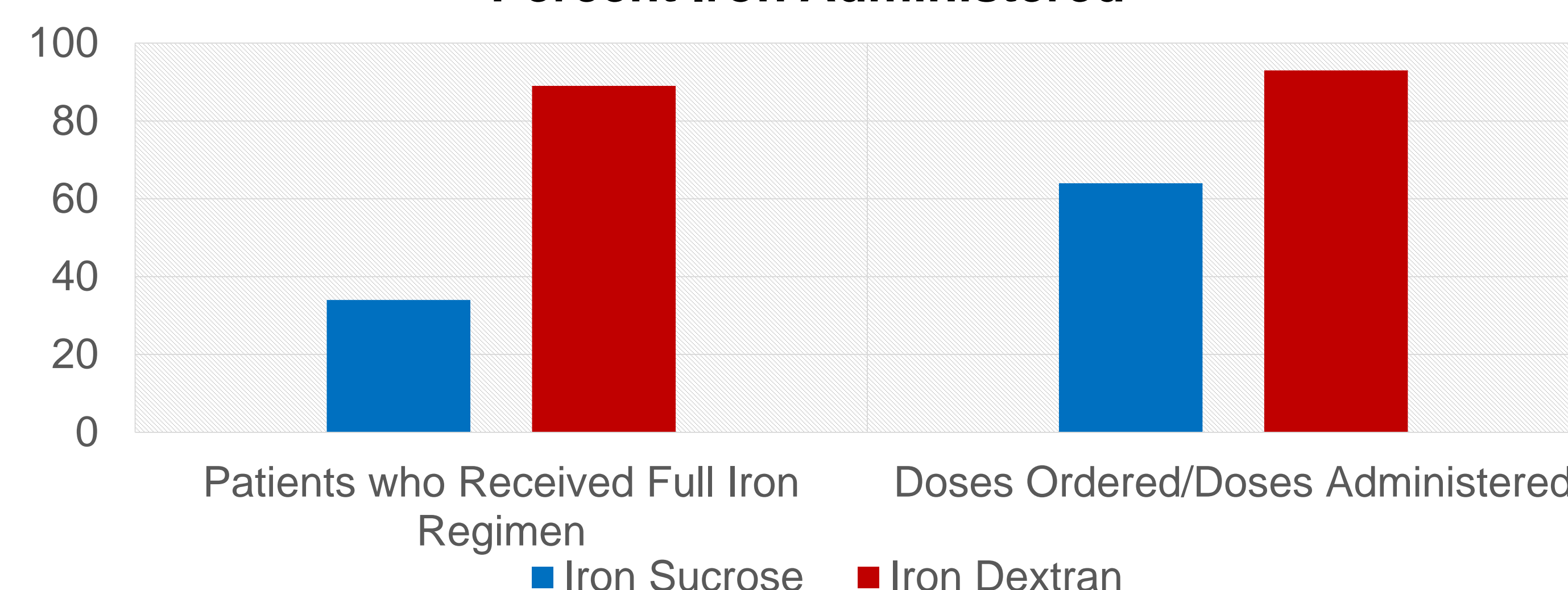
- Pregnancy

Baseline Demographics

27 patients ordered IV iron; 26 patients received at least 1 dose

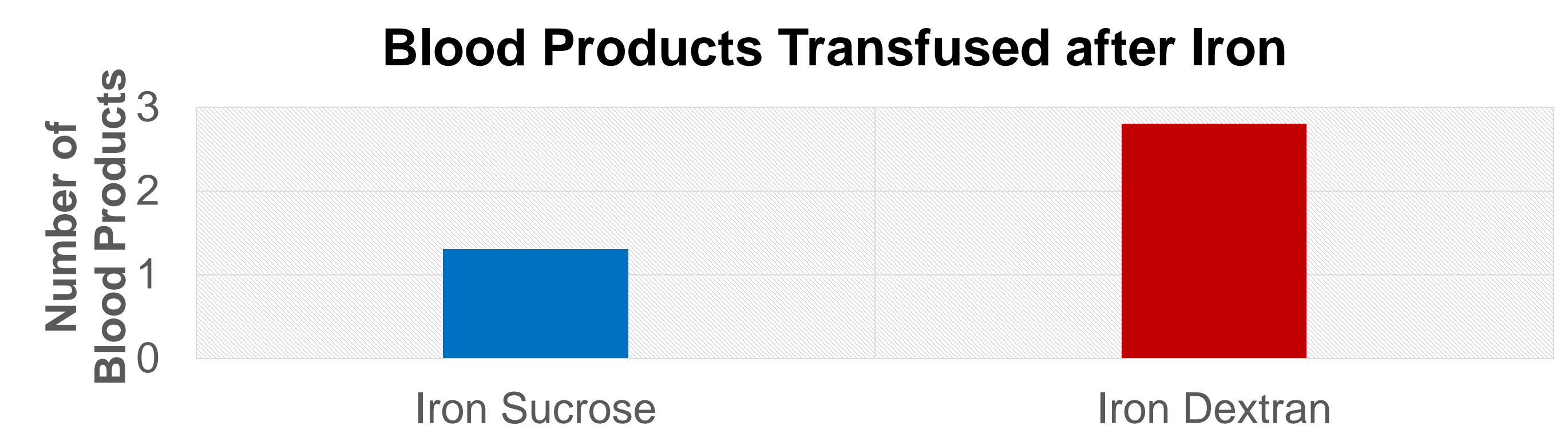
| Patient Characteristics | Iron Sucrose (n = 17) | Iron Dextran (n = 9) |
|-------------------------|-----------------------|----------------------|
| Total (N = 26) | | |
| Age – yr | 59 (24 – 88) | 45 (19 – 78) |
| Male | 12 (80) | 6 (67) |
| Type of injury | | |
| Blunt | 14 (82) | 5 (56) |
| Penetrating | 0 (0) | 1 (11) |
| Non-traumatic | 3 (18) | 3 (33) |

Percent Iron Administered



Results

Primary Endpoint



Secondary Endpoint

| IV Iron Formulation | Blood Products Transfused (Units per Patient) | Projected Annual Cost of Blood Transfusions* |
|---|---|--|
| Iron Sucrose (n = 17) | 1.3 (0 – 12) | \$13,656 |
| Iron Dextran (n = 9) | 2.8 (0 – 12) | \$29,412 |
| *1 unit packed red blood cell = \$202 Projected cost savings annually | | -\$15,756 |

Conclusions

- TACS patients given standardized iron regimen with iron sucrose have less blood transfusions in mostly blunt injuries
- Higher rates of complete administration with non-standardized regimen
- The projected annual cost saved in blood products transfused is \$15,756

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