BACKGROUND

- Iron products are FDA approved and guideline directed for iron deficiency anemia (IDA).
- Lab tests used to diagnose iron deficiency anemia include low hemoglobin (Hgb) and low serum ferritin OR low TSAT with high TIBC.
- The adult IV iron order set at The University of Kansas Health System (TUHK) includes iron sucrose or ferric gluconate (can be ordered outside of order set), nursing vital checks during administration, and pre-infusion reaction medications (diphenhydramine and epinephrine).
- Drug utilization evaluation of 265 adult patients receiving IV iron products at TUHK from 2006 to 2010 found differences in prescribing patterns among services and indications.
- The order set was not utilized in 71% of patients. 27% did not have iron studies within 14 days.
- An outpatient anemia clinic through TUKHS exists to refer clinically eligible patients for outpatient management providing the opportunity for outpatient use of IV iron.

METHODS

- Single site, quasi-experimental chart review.
- Inclusion criteria: adult patients who received IV iron while inpatient at TUKHS on or after December 4th, 2020.
- Exclusion criteria: patients <18 years of age, pregnant.

Interventions Implemented:
1. Iron sucrose and ferric gluconate restricted to those who ordered it.
2. Iron studies (Hgb, TSAT, TIBC, and ferritin) collected within 14 days; each unit of blood contains around 125 mg of iron (Table 1).
3. Inclusion of indication-specific guideline recommendations for appropriate utilization of IV iron.

RESULTS

- Appropriate IV iron use based on selected indication.
- Appropriate IV iron use based on total iron received over a 14-day period.

Safety endpoints:
- Decrease in patients receiving >1000 mg of IV iron post-intervention.
- Increase in availability of preinfusion reaction medications post-intervention.

Secondary endpoints:
- Cost savings based on average total dose received post-intervention.
- Number of referrals made to the outpatient anemia clinic.

TABLE 1. Guideline Recommendations for Iron Use Based on Indication

<table>
<thead>
<tr>
<th>Indication</th>
<th>Hgb (g/dL)</th>
<th>Ferritin (ng/mL)</th>
<th>TSAT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKD</td>
<td>&lt;13 (g/dL)</td>
<td>&lt;12 (g/dL)</td>
<td>≤20 (%)</td>
</tr>
<tr>
<td>IDA/CKD</td>
<td>&lt;13 (g/dL)</td>
<td>&lt;12 (g/dL)</td>
<td>≤20 (%)</td>
</tr>
<tr>
<td>11 (g/dL)</td>
<td>&lt;12 (g/dL)</td>
<td>≤20%</td>
<td></td>
</tr>
<tr>
<td>11 (g/dL)</td>
<td>&lt;12 (g/dL)</td>
<td>≤20%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>≤12 (g/dL)</td>
<td>≤20%</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES