USE OF INTRAVENOUS IRON IN HEART FAILURE OCTOGENARIANS AND NONAGENARIANS WITH IRON DEFICIENCY

Pharmacy Department. Corporació Sanitària Parc Taulí de Sabadell. Barcelona, Spain

**Background**
Anemia is an important comorbidity in heart failure (HF) and iron deficiency (ID) is the commonest contributing factor. Intravenous iron therapy improves quality of life although data in elderly patients is scarce.

**Objectives**
- To describe use of iron in patients with heart failure and iron deficiency.
- To analyze differences between receiving or not intravenous iron.

**Materials and Methods**
Retrospective observational study in a University Hospital. January-to-March 2019 Acute Geriatric Unit-admitted octogenarian and nonagenarian patients for unbalanced HF and ID were included.

Registered variables: sociodemographics, length of stay (LOS), Barthel index, oral iron supplements, use of intravenous iron during admission, analytical parameters at admission and post-discharge, mortality, readmission at 6 months.

Definitions: anemia (hemoglobin: male, <13.0 g/dL; female, <12.0); ID (ferritin <100 μg/L or 100-299 with transferrin saturation (TSAT) <20%).

**Results**
Among 89 unbalanced heart failure-admitted patients, 38 were diagnosed of iron deficiency.

<table>
<thead>
<tr>
<th>NO INTRAVENOUS IRON</th>
<th>INTRAVENOUS IRON</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=16 (42.1%)</td>
<td>n=22 (57.9%)</td>
<td></td>
</tr>
<tr>
<td>Age (years) 87.8 (86.8-89.4)</td>
<td>86.2 (84.0-89.3)</td>
<td>0.261*</td>
</tr>
<tr>
<td>Sex (female) 8 (50.0%)</td>
<td>17 (77.3%)</td>
<td>0.080*</td>
</tr>
<tr>
<td>LOS (days) 11 (8-15)</td>
<td>19 (14-24)</td>
<td>0.017*</td>
</tr>
<tr>
<td>Barthel Index 77.5 (50-90)</td>
<td>62.5 (50-85)</td>
<td>0.313*</td>
</tr>
<tr>
<td>Anemia 9 (56.3%)</td>
<td>16 (72.7%)</td>
<td>0.290*</td>
</tr>
</tbody>
</table>

**At admission**
- Oral iron 0 (0.0%) to 6 (27.3%) | 0.030* |
- Cockcroft-Gault (ml/min) 29.4 (19.3-38.0) to 27.4 (19.7-34.0) | 0.301* |
- Hemoglobin (g/L) 124 (112.5-139.5) to 110.5 (107-122) | 0.089* |
- Iron (mcg/dL) 35 (24.5-51.5) to 38 (28-43) | 0.953 |
- Ferritin (ng/mL) 119.7 (75.6-190.2) to 105.7 (40.4-122.7) | 0.178* |
- Transferrin (mg/dL) 215 (187-235.5) to 238 (215-270) | 0.044* |
- TSAT (%) 12.2 (9.5-18.3) to 12.15 (8.4-13.6) | 0.249* |

**At discharge**
- Oral iron 0/12 (0.0%) to 6/18 (33.3%) | 0.057* |
- Cockcroft-Gault (ml/min) 35.14 (28.1-48.9) to 28.93 (22.9-34.9) | 0.188* |
- Hemoglobin (g/L) 114 (112-137) to 114.5 (113.5-127.5) | 0.812* |
- Iron (mcg/dL) 33.5 (22-47) to 70.0 (66.5-94.5) | 0.033* |
- Ferritin (ng/mL) 293.8 (194.4-312.6) to 444.5 (313.7-747.0) | 0.053* |
- Transferrin (mg/dL) 200 (151-239) to 206.5 (199.5-247.0) | 0.420* |
- TSAT (%) 16.8 (9.6-17) to 21 (18.3-36.3) | 0.062* |
- Mortality 4 (25.0%) to 4 (18.2%) | 0.698* |

**At 6 months of discharge**
- Re-admission 4/12 (33.3%) to 7/18 (38.9%) | 1.000* |
- Global mortality 6/16 (37.5%) to 10/22 (45.5%) | 0.624* |

**Conclusion**
- In our octogenarians and nonagenarians cohort, 58% of patients received intravenous iron, higher than similar studies.
- According to guidelines, no oral iron was prescribed, neither during admission, nor at discharge.
- Intravenous iron increases length of stay, without affecting mortality. However, iron deficiency parameters improve.

**References**