IRON STATUS AFFECTS SURVIVAL IN PATIENTS WITH PULMONARY HYPERTENSION

Poster Contributions
Hall C
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Background: Iron is an important cofactor in oxygen transport and iron availability influences the pulmonary vasoconstrictor response to hypoxia. We aimed to determine the impact of iron deficiency on long term survival in pulmonary hypertension (PH) and its relationship with hemodynamics, exercise capacity and NYHA class.

Methods: Iron deficiency (ID), defined by raised levels of soluble transferrin receptor (sTfR) in conjunction with iron studies were investigated in 136 patients with PH. Iron data were related to 6 minute walk distance (6MWD), hemodynamics from the right heart catheterization, oxygen requirements and NYHA functional class at the time of blood sampling. Pts were classified according to Dana Point 2008 classification for PH. Survival status was gathered on September 31, 2013 and survival time was calculated individually for each pt from blood sampling to censoring, death or lung transplantation.

Results: ID was present in a majority of pts with PH (69%) with a mean hemoglobin of 11.8 gm/dl compared to 13 gm/dl in iron sufficient pts. ID was associated with lower 6MWD (232 vs 312 meters, p=0.03), higher oxygen requirement (2.3 vs 1.1 liter, p=0.02) and worse NYHA class (2.9 vs 2.4, p=0.0003) compared to iron sufficient pts respectively. There was no significant difference in mean pulmonary artery pressures (42.5 vs 40.5 mm of Hg, p=0.47), pulmonary vascular resistance (6.6 vs 7.3 WU, p=0.42) or cardiac index (2.5 vs 2.5 L/min/m2, p=0.9) in iron deficient and iron sufficient pts respectively. The cumulative incidence of all cause death or need for lung transplantation was 28% in iron deficiency group (25 deaths, 2 lung transplant) compared to 16% (7 deaths) in iron sufficient group respectively at a mean follow up period of 18 months in both groups. The mean age was similar in both groups (61 vs 57, p=0.08). The use of antiplatelet agents or warfarin was significantly higher in iron deficient pts compared with iron sufficient pts (20% vs 0.04%).

Conclusions: ID is present in majority of pts with PH and is assoc with worse survival, lower 6MWD and higher O2 requirements. Iron status should be evaluated in all pts with PH even in the absence of anemia, esp in pts on antiplatelet or anticoagulant agents.