Abstract: **P601**

**Heart disease and pancreatic iron in thalassemia major**

**Authors:**
A Meloni¹, L Pistoia¹, G Restaino², S Renne³, N Giunta⁴, R Righi⁵, P Giuliano⁴, A Riva⁶, P Giovangrossi⁷, A Vitucci⁸, V Positano¹, A Pepe¹, ¹Fondazione Toscana Gabriele Monasterio - Pisa - Italy, ²Centro di Ricerca e Formazione ad Alta Tecnologia nelle Scienze Biomediche - "Giovanni Paolo II" - Campobasso - Italy, ³Presidio Ospedaliero “Giovanni Paolo II” - Lamezia Terme - Italy, ⁴Ospedale Civico - Palermo - Italy, ⁵Ospedale del Delta - Lagosanto (FE) - Italy, ⁶OSP. SS. Annunziata ASL Taranto - Taranto - Italy, ⁷Ospedale S. M. Goretti - Latina - Italy, ⁸Polyclinic Hospital of Bari - Bari - Italy.

**Topic(s):**
Cardiac Magnetic Resonance

**Citation:**

Background. Some preliminary data have postulated a correlation between pancreatic iron overload and heart iron and function in thalassemia major (TM) patients.

Purpose: In the present multicenter study we explored systematically the link between pancreatic iron and heart disease in a large cohort of TM patients.

Methods. We considered 880 TM patients (467 M, mean age 37.83±10.05 years) enrolled in the E-MIOT (Extension-Myocardial Iron Overload in Thalassemia) project. T2* measurements were performed over pancreatic head, body and tail and global value was the mean. Myocardial iron overload (MIO) was quantified using a T2* segmental approach. Biventricular function parameters were assessed by cine images. Late gadolinium enhancement (LGE) images were acquired to detect myocardial fibrosis.

Results. A significant correlation between pancreatic and cardiac iron was reconfirmed in this more numerous population and a normal pancreas T2* showed negative predictive value of 100% for cardiac iron. LGE sequences were acquired in 273 TM patients and 84 (30.77%) of them showed macroscopic myocardial fibrosis. Global pancreas T2* values were significantly lower in patients with fibrosis (7.38±6.19 ms vs 11.91±9.79 ms; P<0.0001).

Sixty-four patients had at least one cardiac complication (arrhythmias, heart failure, pulmonary hypertension, vascular disease). Patients with cardiac complications showed a significant lower global pancreas T2* (7.83±5.61 ms vs 12.76±10.34 ms; P=0.024). Specifically, global pancreas T2* values were significantly lower in patients with heart failure as well as in patients with arrhythmias and all patients with one of these two diseases had a pathologic global pancreas T2* value (see Figure).

Conclusion. Pancreatic iron is a strong predictor not only for cardiac iron, but also for cardiac complications supporting a more profound link between pancreatic iron and heart disease in TM.
Abstract: P601
Heart disease and pancreatic iron in thalassemia major
Authors: A Meloni1, L Pistoia1, G Restaino2, S Renne3, N Giunta4, R Righi5, P Giuliano4, A Riva6, P Giovangrossi7, A Vitucci8, V Positano1, A Pepe1
1 Fondazione Toscana Gabriele Monasterio - Pisa - Italy, 2 Centro di Ricerca e Formazione ad Alta Tecnologia nelle Scienze Biomediche - "Giovanni Paolo II" - Campobasso - Italy, 3 Presidio Ospedaliero "Giovanni Paolo II" - Lamezia Terme - Italy, 4 Ospedale Civico - Palermo - Italy, 5 Ospedale del Delta - Lagosanto (FE) - Italy, 6 OSP. SS. Annunziata ASL Taranto - Taranto - Italy, 7 Ospedale S. M. Goretti - Latina - Italy, 8 Polyclinic Hospital of Bari - Bari - Italy

Background. Some preliminary data have postulated a correlation between pancreatic iron overload and heart iron and function in thalassemia major (TM) patients.

Purpose: In the present multicenter study we explored systematically the link between pancreatic iron and heart disease in a large cohort of TM patients.

Methods. We considered 880 TM patients (467 M, mean age 37.83±10.05 years) enrolled in the E­MIOT (Extension­Myocardial Iron Overload in Thalassemia) project. T2* measurements were performed over pancreatic head, body and tail and global value was the mean. Myocardial iron overload (MIO) was quantified using a T2* segmental approach. Biventricular function parameters were assessed by cine images. Late gadolinium enhancement (LGE) images were acquired to detect myocardial fibrosis.

Results. A significant correlation between pancreatic and cardiac iron was reconfirmed in this more numerous population and a normal pancreas T2* showed negative predictive value of 100% for cardiac iron. LGE sequences were acquired in 273 TM patients and 84 (30.77%) of them showed macroscopic myocardial fibrosis. Global pancreas T2* values were significantly lower in patients with fibrosis (7.38±6.19 ms vs 11.91±9.79 ms; P<0.0001).

Sixty­four patients had at least one cardiac complication (arrhythmias, heart failure, pulmonary hyperthension, vascular disease). Patients with cardiac complications showed a significant lower global pancreas T2* (7.83±5.61 ms vs 12.76±10.34 ms; P=0.024). Specifically, global pancreas T2* values were significantly lower in patients with heart failure as well as in patients with arrhythmias and all patients with one of these two diseases had a pathologic global pancreas T2* value (see Figure).

Conclusion. Pancreatic iron is a strong predictor not only for cardiac iron, but also for cardiac complications supporting a more profound link between pancreatic iron and heart disease in TM.