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Right ventricular wall motion abnormalities n Thalassemia Major patients

Antonella Meloni[1*], Vincenzo Positano[1], Sabrina Armari[2], Giuseppina Secchi[3], Giancarlo Izzi[4], Cristina Salvatori[1], Claudio Ascioti[5], Gennaro Restaino[6], Massimo Lombardi[1], Alessia Pepe[1]

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Background

Movement abnormalities in the left ventricle (LV) were shown to be not really frequent in thalassemia major (TM) patients but they were associated with age, myocardial iron overload, LV dilation and dysfunction, and myocardial fibrosis. No data are available about the prevalence and the correlates of right ventricular (RV) wall motion abnormalities. This study investigated the relationship between RV and LV motion abnormalities and between RV motion and function in a large cohort of well-treated TM patients.

Methods

CMR was performed in 1092 TM patients (537 male; 30.6 ± 8.5 years) enrolled in the Myocardial Iron Overload in Thalassemia (MIOT) Network. Cine images were acquired to evaluate wall motion and to quantify RV volumes and ejection fraction (EF).

Results

Abnormal motion of the LV was found in 66 (6%) patients (60 hypokinetic and 6 dyskinetic). Abnormal motion of the RV was found in 35 (3.2%) patients (29 hypokinetic, 5 dyskinetic and 1 akynetic). Abnormal LV motion was not correlated with abnormal RV motion. Seventeen patients showed movement abnormalities in both ventricles. The Table 1 shows the comparison between TM patients with normal and abnormal RV motion. Patients with abnormal RV motion were older and they were more frequently males. Right volumes indexed by body surface area (BSA) were significantly higher in patients with abnormal RV motion while the EF was significantly lower.

Conclusions

In TM patients movement abnormalities in the right ventricle were less frequent compared to the left ventricle, but were associated with age, sex, RV dilation and dysfunction.

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Table 1

	Abnormal RV motion	Normal RV motion	P
Age	33.9 ± 5.9	30.5 ± 8.6	0.013
Sex (M/F)	27/8	510/547	0.001
RV end-diastolic volume index (ml/m2)	110.4 ± 48.2	83.4 ± 19.2	< 0.0001
RV end-systolic volume index (ml/m2)	61.5 ± 29.6	32.5 ± 11.4	< 0.0001
RV ejection fraction (%)	44.9 ± 10.1	61.4 ± 7.7	< 0.0001

[1]CMR Unit, Fondazione G.Monasterio CNR-Regione Toscana and Institute of Clinical Physiology, Pisa, Italy
Full list of author information is available at the end of the article

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Authors' details
[1]CMR Unit, Fondazione G.Monasterio CNR-Regione Toscana and Institute of Clinical Physiology, Pisa, Italy. [2]Reparto di Pediatria, Azienda Ospedaliera di Legnago U.O., Legnago, Italy. [3]Servizio trasfusionale, Azienda USL n° 1, Sassari, Italy. [4]Dipartimento Materno-Infantile U.O. Pediatria Oncoematologia, Azienda Ospedaliera di Parma, Parma, Italy. [5]Struttura Complessa di Cardioradiologia, P.O. "Giovanni Paolo II", Lamezia Terme, Italy. [6]Dipartimento di Radiologia, Università Cattolica del Sacro Cuore - Centro di Ricerca e Formazione ad Alta Tecnologia nelle Scienze Biomediche, Campobasso, Italy.

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