

Oral presentation

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Myocardial fibrosis by delayed enhancement cardiovascular magnetic resonance and HCV infection in thalassemia major patients

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Introduction

Delayed enhancement (DE) cardiac magnetic resonance (CMR) technique is the only validated non-invasive approach used for detecting myocardial fibrosis. In thalassemia major (TM) patients, myocardial fibrosis has been detected using the DE technique and a positive correlation with anti-HCV antibodies has been described. However, in general HCV-induced cardiomyopathy is still controversial, and its pathogenesis is not well understood.

Purpose

The aim of our study was to verify a possible correlation between myocardial fibrosis detected by DE CMR and chronic HCV infection in a large retrospective cohort of TM patients.

Methods

We analyzed 434 Thalassemia Major (TM) patients (233 males, mean age 31 ± 9 years) consecutively enrolled in the MIOT (Myocardial Iron Overload in Thalassemia) study [1]. CMR was performed using a 1.5 T MR scanner (GE Signa/Excite). Contrast delayed enhanced images were acquired in short vertical, horizontal, and oblique long-axis views from 10 to 18 minutes, after the Gadobutrol (Gadovist®; Bayer Schering Pharma; Berlin, Germany, 0.2 mmol/Kg) intravenous administration, using a fast gradient-echo inversion recovery sequence. Inversion times were adjusted to null the normal myocardium (from 210 ms to 300 ms) with voxel size of $1.6 \times 1.25 \times 8.0$ mm. DE extent was evaluated visually using a two-point scale: enhancement absent or present. HCV-RNA tests were sensitive enough to detect more than 50 copies/ml.

Results

Ninety out of 434 TM patients (21%) were found to have myocardial fibrosis by DE CMR technique. There was a significant correlation between the presence of myocardial fibrosis and the HCV-RNA positive patients plus the patients with a previous diagnosis of chronic hepatitis C treated by alpha-interferon ($P = 0.026$).

Conclusion

Our finding supports the hypothesis that HCV infection can be involved in the pathogenesis of myocardial fibrosis in the multitransfused TM patients, who could therefore benefit from therapeutic interventions directed towards the eradication of HCV.

References

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