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## Post myocardial infarct ventricular remodeling, relationship between scar size and degree of heart failure

**Background:** Myocardial scarring is considered a strong trigger of LV adverse remodeling however, the presence and the extent of myocardial scarring is rarely emphasized as a prognostic marker. Aim: we tested whether the assessment of myocardial scarring by cardiac magnetic resonance (MRI) would play an independent role in predicting advanced chronic heart failure (ACHF) in post myocardial infarction (MI) patients.

**Methods:** 902 post MI patients had myocardial function assessed with Magnetic Resonance and Gadolinium, (MRI-GLE) between 2006 and 2011, after a documented MI. Established criteria were used to categorize patient as having ACHF on the basis of the consensus of heart failure association of the European Society of Cardiology. The extent of myocardial scarring was obtained in multiple views and averaged to obtain mean total scar.

**Results:** In 561 patients (2008-2011) the variable ACHF was available; 186/561 were recognized to have ACHF at the time of CMR. Mean total scar correlated with ESVI ($r = 0.549$, $p<0.01$), EDVI ($r = 0.44$, $p<0.01$), EF ($r = -0.566$, $p<0.01$) and with LV Mass ($r=0.315$, $p< 0.01$). Patients were grouped in 4 groups according to scar extent (scar extent <10%, 11-35, 36-49, >/=50%); a significant progressive deterioration in all the hemodynamic and geometric parameters was observed from group 1 to 4; 32% of the scar extent was identified as the optimal cut off point to predict the presence of ACHF; on logistic regression analysis, scar extent (as a continuous variable or dichotomized at 32%) was an independent predictor of ACHF, either crude (OR 6.43848; 95% CI 4.239-9.777, p 0.000) or adjusted for EF and ESV (OR 3.4367; CI 1.983-5.954, p 0.000 ).

**Conclusions:** Myocardial scarring detected with MRI is an independent predictor of chronic advanced heart failure in post-infarction patients. MRI could aid further risk stratification in high risk post-MI patients.

### Biography

Vincent DOR was born on 14th October, 1932 in Marseille, France. He is a Chairman of the International Cardiothoracic Center of Monaco since 1987. He did his education in Marseille University (France) 1952-61 (thesis 1961). He also served as an Associate Professor Cardio-thoracic Surgery at Marseille University during 1965-1972. He had done his Fellow in Cardiac Surgery at Stanford University, USA during 1966. He is a member of Société française de chirurgie thoracique et cardiovasculaire since 1963, Société française de cardiologie since 1965, International Society of cardiovascular surgery since 1975, European Association for Cardio Thoracic Surgery since 1987 and American Association for Thoracic Surgery since 1990. His main interest is on Thoracic Surgery and Cardiac Surgery.

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