

Abstract

This Thesis Dissertation comprises the characterization of myocardial infarction evaluated using magnetic resonance imaging. It focuses on the quantification of the major indices that can be measured from the images of the different sequences obtained by cardiac magnetic resonance imaging. The use of this technique is currently considered as the reference method for exploring the heart anatomy in a noninvasively way and valuing qualitatively, semiquantitatively and quantitatively.

Myocardial infarction is one of the diseases that cause most deaths in the world. The overall aim of this thesis was to evaluate quantitatively, by performing analysis early after myocardial infarction, which of the indices allow us to predict an improvement in the systolic function. This analysis can be performed by means of cardiac magnetic resonance imaging after myocardial infarction (6 months).

Patients included in this study were previously evaluated by a cardiologist and underwent the study protocol of ischemic heart disease, fulfilling the Helsinki Declaration. All patients were assessed similarly by cardiac magnetic resonance imaging. At the sixth month the cardiac magnetic resonance was repeated following the same protocol as in the initial exploration.

Quantification of cardiac magnetic resonance imaging was performed on a workstation, using specific software QMASS 6.1.5 MR.

The parameters derived from each sequence were evaluated by manual definition of endocardial borders in all slices. The location of the segments was performed using the 17-segment model.

In conclusion the quantitative analysis of the different indexes clearly lets us know which of these indexes is useful for predicting late systolic function after myocardial infarction