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Consideration of the impact of reperfusion therapy on the quantitative relationship between the Selvester QRS score and infarct size by cardiac magnetic resonance

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Introduction

It has previously been shown that there is a good agreement between the Selvester QRS score and myocardial infarct (MI) size determined by post mortem histopathology in patients with non-reperfused MI. Currently, however, most patients with acute coronary thrombosis receive reperfusion therapy.

Purpose

The aim of this study was, therefore, to test the hypothesis that early reperfusion alters the quantitative relationship between Selvester QRS score and MI size.

Methods

Twenty-seven patients with acute first-time repefused MI were studied. Infarct size was determined by late gadolinium enhancement (LGE) cardiac magnetic resonance (CMR) and estimated with the 50-criteria/31-point Selvester QRS scoring system one week after admission. The findings in the present study were compared with previous post mortem studies exploring the quantitative relationship between Selvester QRS score and MI size in non-reperfused patients.

Results

The quantitative relationship between QRS score and MI size by LGE-CMR in the present study of early reperfused MI was significantly different ($p < 0.0001$) from previous post mortem histopathology studies of non-reperfused MI. In the present study, each QRS point represented approximately 2% left ventricle (Figure 1A), compared to approximately 3% in previous post mortem histopathology studies of non-reperfused MI (Figure 1B).

Conclusion

There is a different quantitative relationship between QRS score and MI size in early reperfused MI compared to non-reperfused MI, partly explained by differences in MI size. Thus, the Selvester QRS scoring system may not be linearly related to MI size.

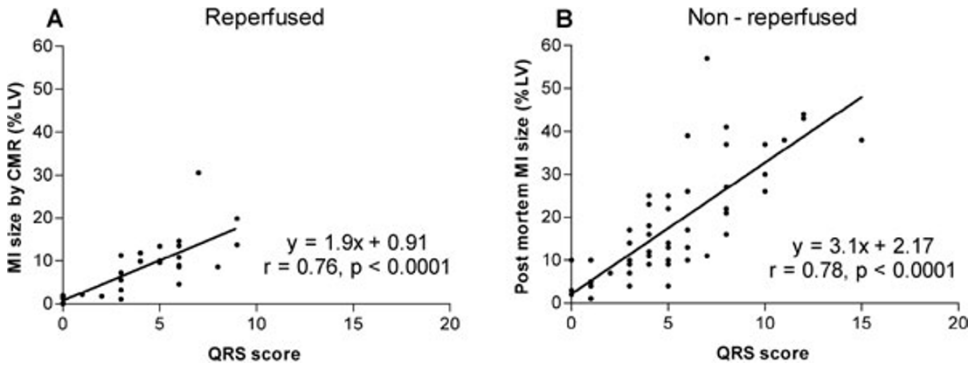

Figure 1