Stress cardiovascular magnetic resonance and mortality in a registry of 2496 elderly patients with chronic coronary syndrome. Prognosis and decision-making

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Background. In recent guidelines, non-invasive imaging techniques play a pivotal role in the management of chronic coronary syndrome (CCS). The elderly represent a large percentage of our routine CCS population and risk stratification in this scenario is challenging. The potential of vasodilator stress cardiovascular magnetic resonance (CMR) for this purpose is unknown.

Purpose. We explore the prognostic value and the usefulness for decision-making of the ischemic burden determined by vasodilator stress CMR imaging in a large cohort of elderly patients with known or suspected CCS.

Methods. The study group was made up of 2496 patients older than 70 years submitted to vasodilator stress CMR for known or suspected CCS in our health department from 2001 to 2016 (mean age 76 ± 4 years, 52% male). Clinical and vasodilator stress CMR characteristics were prospectively recorded. The ischemic burden (number of segments with stress-induced perfusion deficit) was calculated following the 17-segment model. Its association with all-cause mortality and the effect of vasodilator stress CMR-guided revascularization (within the following 3 months) were analyzed retrospectively.

Results. During a median follow-up of 4.58 years, 430 deaths (17.2%) were recorded. A larger ischemic burden was an independent predictor of mortality: hazard ratio [95% confidence intervals]: 1.04 [1.01-1.07] for each additional ischemic segment, p = 0.006). This association also occurred in patients over 80 years of age and in women (p < 0.001). Compared to non-revascularized patients, revascularization associated with worse outcomes at low ischemic burden and exerted protective prognostic effect in patients with extensive ischemia both in the whole group (p for interaction = 0.003) and in 496 patients matched 1:1 by a propensity score (p = 0.06).

Conclusions. Vasodilator stress CMR represents a valuable tool to stratify risk in elderly patients with known or suspected CCS and might be helpful to guide decision-making in this scenario.

Abstract Figure 1

Figure 1

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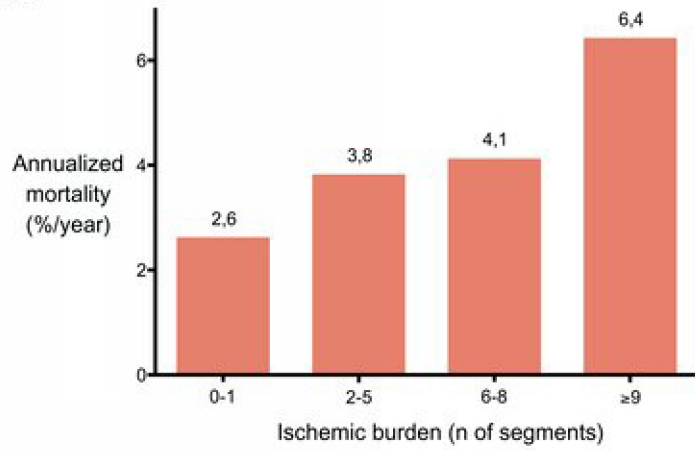
| N of patients: | 1437 | 597 | 284 | 178 |
| Deaths: | 188 | 116 | 67 | 59 |

B