

Elderly patients with ACS should not be denied invasive coronary angiography: pros and cons

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The management of acute coronary syndromes (ACS) typically involves an invasive strategy, including coronary angiography and – eventually – myocardial revascularisation. However, this approach might be less beneficial or even contraindicated when the expected benefits are small or even outweighed by significant risks. It particularly holds true in elderly patients, who often present with frailty and multiple comorbidities. As life expectancy continues to increase, the number of elderly individuals presenting with ACS is growing, making it crucial to define the optimal treatment strategy for this population. The SENIOR-RITA Trial has shown that, despite reducing non-fatal myocardial infarction (MI), the invasive approach did not affect mortality in elderly patients with ACS, raising questions about the balance between the risks and benefits of such a strategy. Nonetheless, early invasive coronary angiography and myocardial revascularisation can improve clinical outcomes, symptoms and quality of life. Whether an invasive strategy should be routinely applied to elderly patients presenting with ACS or whether a more personalised approach should be prioritised remains a subject of debate.

Pros

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Don't close the door!

A superficial reading of the findings from the Older Patients with Non-ST-SEGmeNt elevatiOn myocaRdial Infarction Randomized Interventional TreAtment (SENIOR-RITA) Trial¹ may lead one to believe that, in older patients (≥ 75 years) presenting with non-ST-segment elevation myocardial infarction (NSTEMI), an initial conservative approach should be preferred. This is probably a misleading interpretation. On the contrary, a careful interpretation of the SENIOR-RITA Trial, considering it in the context of other studies and daily clinical practice, may open the door of the cath lab to a significant percentage of older NSTEMI patients.

We agree that an invasive strategy did not result in a lower risk of a composite outcome of death or non-fatal infarction compared to a conservative strategy. Nevertheless, some important considerations must be made. First, is death the right endpoint when discussing older patients with MI? Should cardiologists pursue the fountain of youth or focus on

ensuring the wellbeing of patients and their families? Older patients often have multiple long-term conditions that affect prognosis, and the risk of non-cardiovascular death competes directly with that of cardiovascular death².

Additionally, to impact mortality, an invasive strategy must adhere to some important parameters. An invasive approach may reduce mortality only if it is performed early (within the first 4-48 hours)³ and is characterised by the identification and treatment of the culprit lesion, as well as the revascularisation of flow-limiting non-culprit lesions^{2,4}. Invasive management matters if it is associated with complete revascularisation! The investigators of the SENIOR-RITA Trial made a commendable effort but, given the complexities of performing a randomised clinical trial in such a population, were only partially able to respect these timelines and strategies. The median time from randomisation to coronary angiography was 3 days, and the median time from hospital admission to coronary angiography was 5 days¹. Furthermore, revascularisation was performed in only around 50% of patients, with complete revascularisation occurring in about 30%. The positive prognostic effect of an

invasive strategy hinges on revascularisation. Treating just the reasonable culprit lesion is insufficient; all flow-limiting lesions must be addressed to achieve a benefit in terms of cardiovascular mortality².

Moreover, it is important to note that the SENIOR-RITA investigators enrolled and randomised only 22% of eligible patients (1,518 out of 6,977). Fifty-five percent of the screened patients who did not undergo randomisation were treated with an invasive strategy, and among patients excluded because of clinician judgement, 65% received invasive treatment. It is plausible that the investigators used their clinical judgment to identify patients who – based on a mix of clinical history, presentation, and timing – were more likely to benefit from revascularisation.

For all these reasons, we strongly believe that the lack of mortality benefit in the SENIOR-RITA Trial should not be surprising and should not influence decision-making regarding invasive strategies. Cardiologists should be convinced by the significant reductions in non-fatal MI, coronary angiography, and coronary revascularisation among invasively managed patients. While we currently lack direct information from the SENIOR-RITA Trial, we can infer from similar studies that there has likely been a concomitant benefit in terms of residual angina, quality of life, and physical performance⁴. For older

patients, ensuring 3-5 years of wellbeing – avoiding repeated hospitalisations and facilitating independence, autonomy, and relationships with relatives and peers – should be considered as important a goal as mortality.

As cardiologists, we are learning the same lesson from older patients with symptomatic aortic stenosis. These patients thank interventional cardiologists after transcatheter aortic valve implantation (TAVI) not for the longer life expectancy but for the better quality of life that this procedure can provide.

In conclusion, the cardiology community should express gratitude to the SENIOR-RITA investigators for beginning to open the door of our cath lab to older MI patients. However, in order to improve patient outcomes, it is important to guarantee complete revascularisation and a subsequent path of optimal medical treatment and exercise training⁵. Only this holistic approach can fully address the needs of older MI patients.

Conflict of interest statement

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Cons

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Be more conservative with your elderly NSTEMI population!

The use of a routine invasive strategy in ACS patients has become the standard of care, since its benefit was proved compared to conservative management in randomised trials¹. Moreover, in ACS patients presenting with some high-risk criteria (e.g., positive troponin), an early invasive approach demonstrated superiority compared to a delayed approach⁶.

However, the benefit of this approach in the older population has been less investigated as such patients were often either excluded or less represented in major trials. This elderly population carries many specificities which might impact the benefit of an invasive approach. Therefore, the risk-benefit ratio of a routine invasive strategy in older patients is unclear given the paucity of evidence; and more evidence is needed, given the high incidence of such patients in our daily practice due to population ageing.

A recent meta-analysis and the SENIOR-RITA study specifically addressed this question^{1,7}. The main finding is that an invasive strategy followed by revascularisation in half of the population was not able to reduce cardiovascular mortality; however, it did significantly reduce MI and the need for unplanned revascularisation and, therefore, could support a more conservative approach in such population.

Some specificities might explain the specific value of an invasive strategy in this elderly population, which might differ from younger individuals. First, this is a population presenting with a high bleeding risk related to both the antithrombotic drugs and the procedure. However, in contemporary practice with the use of radial access, vascular access complications have been tremendously decreased, as observed in SENIOR-RITA, in which the rate of vascular complications was

very low in the elderly population¹. Second, adherence in such a population with frequent cognitive disorders is a challenge and might expose the patients to higher risk of post-percutaneous coronary intervention (PCI) events. Third, after NSTEMI, up to 50% of elderly patients will require an invasive procedure during the next 12 months, and therefore the appropriate post-PCI dual antiplatelet therapy, with regard to intensity and duration, might not be possible. Finally, the comorbidities of this elderly population could lead to shorter life expectancy regardless of ACS management.

However, one should acknowledge that ACS in the elderly represents a very heterogeneous clinical entity encompassing type 2 MI in very different patients, from active, fit 80-year-olds to very frail patients with cognitive disorder and comorbidities. Indeed, in the RITA-SENIOR study, up to 60% of patients presented cognitive disorders¹, which represents a high-risk profile of our older patients. Beyond cognitive function, elderly patients should be properly assessed regarding comorbidities and life expectancy; although challenging in the urgent setting of NSTEMI, geriatric evaluation might also be helpful.

Also, the timing of an invasive strategy is crucial in all NSTEMI patients and recommended within 24 hours, even in an elderly population. Surprisingly, in RITA-SENIOR¹, the median time between admission and invasive procedure was 5 days, which is very late and could have impacted the results, as older patients are candidates requiring an early strategy and shorter hospital stay.

To conclude, these recent data suggest that a routine strategy for elderly NSTEMI patients is probably excessive for a significant proportion of these patients and should be challenged. Individualised medicine should prevail by selecting the appropriate older patients who might benefit from a routine approach based on their patient profiles,

including prior history, cognitive function, comorbidities and NSTEMI presentation.

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