

Optimizing Outcomes in Elderly MI Patients: A Comprehensive Review of Invasive Management

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Abstract: Cardiovascular disease increasingly impacts elderly, and cases of non - ST - segment elevation myocardial infarction (NSTEMI) are projected to increase as the populace ages. However, clear management guidelines for elderly remain limited. The SENIOR - RITA trial evaluated the effects of invasive versus medical therapy in 1, 518 NSTEMI patients aged 75 and older. After up to five years of follow - up, results showed that invasive treatment did not significantly improve long - term outcomes in terms of mortality or nonfatal heart attacks compared to conservative management, though it offered a small short - term benefit. These findings suggest that a conservative approach may be just as effective for managing NSTEMI in geriatrics.

Keywords: Invasive treatment; Myocardial Infarction; non - ST segment elevation myocardial infarction (NSTEMI); acute coronary syndrome; angiography; revascularization; percutaneous coronary intervention

1. Introduction

Cardiovascular illness plays a main role in disease, death, overall well - being of elderly ^[1] and the incidence is projected to double in the older population by 2040 ^[4]. Age is an established risk factor for acute coronary syndromes ^[2]. Due to progressive ageing in our societies, the general incidence of acute coronary syndromes, especially NSTEMI, is growing ^[3]. Medicinal treatment with a sight to invasive treatment such as angiography and percutaneous coronary intervention in adults with NSTEMI is the suggested standard of maintenance ^[5]. Despite the rising numbers of elderly with acute coronary syndromes and their recognized lesser research results, specific pharmacologic and invasive treatment strategies are lacking due to the inadequate representation of geriatrics in research studies ^[2, 5].

In the issue of The New England Journal of Medicine, the study by SENIOR - RITA Trial Team ^[2] and Investigators for the British Heart Foundation adds some needed data to fill the gaps of medical therapy with invasive therapy in elderly with NSTEMI.

This was a prospective, multicenter, open - label, randomized precise trail that compared an invasive treatment by a conservative therapy approach in elderly patients through NSTEMI.

In this research paper they have included patients at least 75 years of age with type 1 NSTEMI and they have excluded patients with STEMI or unstable angina or cardiogenic shock. They have assessed the frailty with Frailty index and the modified Rockwood Clinical Frailty Scale (using score ranging 1 to 7), degree of comorbidity with comorbidity index (score ranging between 0 to 37), cognitive impairment with Montreal Cognitive Assessment (MoCA ranging between 0 to 30).

They have randomly allotted sample population with conservative therapy and invasive plus conservative therapy in a

1: 1 ratio. Assessed cardiovascular results focusing on main outcome of cardiac mortality or nonfatal heart attack and secondary outcomes like stroke, heart failure hospitalization and bleeding events. Safety outcomes were measured for procedural complications in patients received invasive treatment. they have done follow up at 6 months, 1 year and annually up to five years.

The trail populace included 6977 patients from November 2016 to March 2023 from 48 National Health Service Trusts. From 6977 patients a total of 1518 underwent randomization - 753 received invasive therapy plus conservative therapy and 765 received conservative therapy. The average age of patients was 82 years. Approximately one - third of the patients were measured fragile as per the Fried Frailty Index, The Charlson Comorbidity Index suggested that patient population had a moderate level of comorbidities as the score was 5, The MoCA screening typically indicated mild cognitive impairment as the median score was 24.

Both groups in the study received guideline - recommended pharmacotherapy for NSTEMI management. In invasive treatment group, a high proportion (90.3%) underwent angiography, and almost half of those (49.9%) had a revascularization procedure, with Percutaneous transluminal Coronary angioplasty being the most common intervention.

This trail compared invasive and conservative therapy strategies for managing NSTEMI in elderly over a median follow - up of 4.1 years. The main outcome, which included cardiac mortality or nonfatal heart failure, was alike between two groups, with 25.6% in the invasive strategy group and 26.3% in the conservative group undergoing trials (hazard ratio 0.94, P = 0.53). While the invasive strategy showed a slight short - term benefit at 1 year (12.8% vs.16.8%), the long - term results were nearly identical by 5 years (35.4% vs.34.8%). Overall, while invasive treatment offered some early benefit, long - term consequences were similar to conservative group. Secondary results also revealed generally similar results, with the invasive strategy reducing the need for subsequent

coronary angiography and revascularization, but it did not significantly impact mortality or cardiovascular events.

2. Conclusion

Overall the research by SENIOR - RITA Trial Team^[2] gives perception in the treatment of NSTEMI in older patients with invasive treatment and its consequences. However, given randomized nature of the trail, the researchers concluded that among elderly patients with NSTEMI, an invasive strategy (involving early coronary angiography and revascularization) did not significantly reduce the risk of the composite outcome of death or nonfatal infarction than a conservative strategy (initial medicinal treatment with selective use of angiography). This suggested that a conservative approach may be just as effective as a more aggressive invasive strategy in terms of reducing mortality and major cardiovascular events.

Conflicts of Interest: The authors have no conflicts of interest to declare.

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