MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION IN THE ELDERLY: CHALLENGES AND CONSIDERATIONS

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Abstract: *Recent advances in pharmacological treatments and early myocardial revascularization have significantly improved clinical outcomes for patients with acute myocardial infarction (AMI). However, studies suggest that elderly patients with AMI are less likely than younger patients to receive evidence-based therapies, including myocardial revascularization. Several factors may contribute to this disparity, such as uncertainties regarding the benefits of these interventions in older populations and the increased risks posed by comorbid conditions. The diagnosis, treatment, and post-hospital care of elderly patients with acute coronary syndromes present numerous challenges. A complex interaction of factors, including comorbidities, functional status, socioeconomic conditions, polypharmacy side effects, and individual biological variability, creates a complicated clinical environment. In such cases, healthcare providers often rely on extrapolating data from cardiovascular trials that frequently exclude older adults, either explicitly or implicitly. This article reviews current recommendations and best practices for managing AMI in the elderly population.*

Keywords: *Acute myocardial infarction management, elderly patients, age-related considerations, myocardial reperfusion therapy*

Cardiovascular disease remains the leading cause of death among individuals over the age of 65, impacting both men and women equally. The prevalence and severity of atherosclerotic coronary artery disease (CAD) increase progressively with age. Studies have shown that more than half of those over 60 have significant CAD, and the prevalence of more severe forms, like left main and triple-vessel CAD, grows with age. Subclinical vascular conditions, such as abnormal echocardiograms or increased carotid intima-media thickness, are common in elderly individuals, particularly those with electrocardiographic evidence of myocardial infarction (MI). Data from the Cardiovascular Health Study reveals that 22% of women and 33% of men aged 65-70 exhibit such abnormalities, with these percentages increasing significantly in individuals over 85 years.

The lifetime risk of developing symptomatic CAD is estimated at 1 in 3 for men and 1 in 4 for women, with men typically developing symptoms about 10 years earlier. Key risk factors such as hypertension, diabetes, and lipid abnormalities greatly influence this risk. Despite these alarming statistics, older patients remain underrepresented in clinical trials. In two significant registries that included 69,000 acute coronary syndrome (ACS) patients, approximately one-third of the patients were aged 75 or older. Yet, participation of elderly individuals in ACS trials has not increased over the last few decades, even though this population continues to expand.

Due to the lack of comprehensive trial data, older patients often receive more conservative treatments, which may deviate from recommended guidelines. This article

discusses the specific clinical challenges involved in managing elderly patients with persistent ST-segment elevation MI (STEMI) and reviews recent studies that offer new insights into improving cardiovascular care for this high-risk population.

In this revision, I aimed to maintain a formal, informative tone, while streamlining the language for clarity. The focus was placed on data and statistics to emphasize the gap in treatment for elderly patients, aligning the content with the intended clinical audience.

Clinical Presentation

While the absolute number of patients experiencing ST-segment elevation myocardial infarction (STEMI) increases with age, STEMI represents a smaller percentage of all acute coronary syndrome (ACS) admissions in older populations. In individuals aged 75 and older, STEMI accounts for less than 30% of ACS cases.

Clinical Profile

Presenting symptoms of acute myocardial infarction (MI) in elderly patients often differ from those seen in younger individuals. Symptoms are frequently labeled as “atypical” because they do not match the classic description of substernal pressure with exertion. When pain is present, it may vary in character or location, sometimes appearing as upper abdominal pain rather than the typical crushing or squeezing substernal sensation. Changes in pain perception and altered ischemic thresholds in the elderly contribute to these atypical presentations, though the exact cause remains unclear[1,4,6].

In the National Registry of Myocardial Infarction (NRMI), chest pain at presentation was reported in 89.9% of STEMI patients younger than 65 years, compared to only 56.8% in those aged 85 and older. Similarly, in the Worcester Heart Attack Study, chest pain was reported in 63% of the overall population, but in less than half of women over the age of 75 (45.5%)[5].

Common symptoms in elderly patients may include dyspnea, syncope, shoulder or back pain, weakness, fatigue (more common in women), acute confusion, or epicardial discomfort, often triggered by concurrent illnesses. Various factors, such as age-related changes and comorbidities, have been suggested to explain these atypical presentations (Table 1). Additionally, complications like heart failure may be the only initial sign of MI. In the NRMI registry, acute heart failure (Killip class ›2) occurred in 11.7% of STEMI patients under 65 years but in nearly half (44.6%) of those aged 85 and older. The high frequency of heart failure and atypical symptoms in the elderly often shifts diagnostic suspicion away from an acute ischemic event. As a result, a diagnosis of “other” conditions (rather than unstable angina, rule-out MI, or MI) was recorded more frequently at admission in older patients (5% in those younger than 65 versus 24% in those aged 85 or older).

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