

CHAPTER

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Acute Myocardial Infarction in Elderly

S. B. Gupta

Acute MI in elderly

Etiopathogenesis of acute MI remains the same as in the younger population – sudden rupture of atherosclerotic plaque followed by thrombus formation in the infarct related artery. Atypical symptoms dominate in elderly as compared with the younger patient population. Fatigue or shortness of breath may be the only presenting symptom. The occurrence of missed diagnosis in elderly population on this account remains very high. Incidence of silent myocardial MI in elderly, found incidentally on ECG is quite high, ranging between 38 – 60%.^{4,5} Further, the occurrence of NSTEMI is high in elderly population and ECG diagnosis is difficult and prognosis of unrecognized asymptomatic MI is not good.

Co-existence of co-morbid conditions like diabetes, hypertension, chronic kidney disease, prior MI, CHF and poor myocardial reserve increases the mortality in this subset of population. Mortality from MI is 6-fold greater for ages 75-84 and 8-fold greater over the ages of 85 years when compared to patients ages 55-64 years⁶.

Management principles of acute MI in elderly

Reperfusion therapies, either thrombolytics or percutaneous coronary intervention (PCI) remain

the mainstay in the management of acute MI. Data from all recent trials show the supremacy of PCI over the thrombolytic therapy. The treatment options are subject to facilities available on-site. Thrombolytics have the benefits when given within 6 hours of presentation and establishes flow in 60-70% of patients with re-occlusion in approx one-third of the cases. Early thrombolytic trials have excluded the patients over the age of 75 years. However, mortality benefits are more in the population aged 65-75 years as compared to younger patients.⁷⁻⁹

Felicitated thrombolysis using thrombolytics and IV glycoprotein (GP) IIb/IIIa inhibitors has been studied in various trials with various outcome data. Combination therapy has shown benefits in overall population but the data reveals an increased adverse event rates in elderly subset. In GUTSO V (The Global Utilization of Strategies to Open Occluded Coronary Arteries – V) which had 2237 patients above the age of 75 years out of total 16588 patients received reteplase with or without abciximab. Patients > 75 years of age had twice the number of intracranial hemorrhages as compared to the group < 75 years of age.¹⁰ ASSENT-3 (Assessment of the Safety and Efficacy of a New Thrombolytic Regimen – 3) also showed no benefit of combination therapy in the elderly patients.¹¹ Although the data are limited, facilitated thrombolysis offers no

benefits in the elderly population and may affect the outcome adversely.

Current data support the use of primary angioplasty (PAMI) as the preferred strategy in the treatment of acute MI. Stent implantation has further improved the outcome. In particular, the reduced rate of intracranial hemorrhage in PAMI makes it as more attractive option in elderly in management of acute MI. The Cooperative Cardiovascular Project database revealed the superiority of PAMI over thrombolysis. 20683 patients (73 ± 6 years) had lower 30 day and 1 year mortality in the PAMI group as compared to the group who received thrombolysis. The incidence of post-MI angina, re-infarction, intracerebral hemorrhage, stroke and major bleeding was significantly higher in the thrombolytic group. The database confirmed a strong benefit of primary angioplasty over thrombolytic therapy in the elderly subgroup.¹²

Current data favors transfer of patients to a center where the facility of PAMI available, if the transfer time is less than 3 hours.¹³ Because of the substantial benefits of PAMI, several centers have started this option even without on-site stand-by cardiac surgery facilities.¹⁴

Medical therapy following acute MI in elderly population – aspirin, betablockers, ACEIs/ARBs and statins is no different from the management in the younger group. The elderly subjects are under thrombolized, receive betablockers much less and have higher complication and mortality rate.¹⁵

Summary

Cardiovascular disease is the leading cause of death in United States.¹ Coronary artery disease is the most prevalent disease in the elderly population, with an estimated 3.6 million patients. It accounts for about two-thirds of all deaths in elderly population in the United States.^{2,3} Since 1990s, therapeutic options have dramatically have changed for the management of acute MI in elderly. Still, there are very scarce guidelines for management of acute MI in this

subset of population. Risk factors, symptomatology, treatment options and the outcomes are different for elderly population and need to be discussed in detail.

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