



TREATMENT OF ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION IN ELDERLY PATIENTS

Elderly patients (≥ 75 years old) are experiencing more cardiac events and are experiencing an increased risk of bleeding and ischemia. However, most randomized clinical trials exclude elderly patients when evaluating therapeutic options in acute coronary syndrome (ACS) and, as a result, there is little information to guide the management of ACS in this patient population. Literature indicates that invasive techniques may be beneficial for this patient population, although fewer elderly patients are receiving invasive strategies. This issue of *CLIPs* will provide an overview of the data regarding optimal reperfusion and antithrombotic strategies among STEMI in elderly patients. If you need further information, please contact the Center for Healthcare Innovation and Patient Outcomes Research (CHIPOR) at chipor@samford.edu.

Lattuca B, Kerneis M, Zeitouni M, et al. Elderly patients with ST-segment elevation myocardial infarction: a patient-centered approach. *Drugs & Aging*. 2019; <https://doi.org/10.1007/s40266-019-00663-y>.

Introduction

- The use of antiplatelet therapy in elderly patients may decrease the risk of ischemic events and may increase the risk of major bleeding, especially in frail patients.
- Few studies have evaluated treatment strategies for ST-segment elevation myocardial infarction (STEMI), however, more information is available for this patient population in large database registries.
- European clinical practice guidelines do not discriminate between treatment strategies for elderly and younger patients; however, this recommendation may not be carried over in daily practice.
- Due to the lack of published studies, prescribers employ more conservative techniques to treat elderly patients compared to younger patients.

High-risk patients and reperfusion therapy

- Elderly patients are less likely to be treated with percutaneous intervention (PCI) for ACS. In the CRUSADE study, (Can Rapid risk stratification of Unstable angina patients Suppress Adverse outcomes with Early implementation of the American College of Cardiology/American Heart Association guidelines) a reverse association was observed between age and attempt of an invasive reperfusion (HR, 1.13; 95% CI, 1.09-1.16).
- Age was not determined as the only reason that reperfusion was not attempted as other potential confounders may have affected the diagnosis of STEMI (e.g., atypical presentation that included dyspnea, nausea, abdominal pain).
- In addition, the degree of frailty, both functionally and cognitively, may have delayed the decision for reperfusion.
- The decision to delay reperfusion may also be affected by the higher risk of bleeding and chronic kidney disease in elderly patients compared to younger patients.
- Also, elderly patients may also have a higher prevalence of multivessel coronary disease, cardiogenic shock and malignant ventricular arrhythmias.
- Despite all of the other potential confounders, mortality is less likely than heart failure or diabetes in this population. Elderly patients treated with primary PCI have a 2-3 fold lower rate of in-hospital and 12-month mortality compared to those treated medically.

Fibrinolytic therapy among elderly patients

- When primary PCI cannot be performed within 120 min, fibrinolytic therapy is recommended within 12 hours of symptom onset, regardless of age.

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Fibrinolytic therapy among elderly patients (continued)

- Elderly patients are more likely to have absolute (e.g., uncontrolled hypertension, recent stroke, history of intracranial hemorrhage) and relative contraindications (e.g., prior stroke, dementia, chronic anticoagulation) to fibrinolytic therapy.
- The intracranial hemorrhage rate increases from 0.75% in patients aged <70 years to 2% among patients aged >70 years.
- The benefit/risk ratio is very important to guide fibrinolytic administration.

Antiplatelet therapy in elderly patients

- No clinical trial has evaluated platelet inhibition in ACS patients undergoing PCI; however, a recent meta-analysis evaluated 9648 patients from seven randomized clinical trials and found that early platelet inhibition is associated with a reduction in major cardiac adverse events without an increase of major bleeding compared to a delay in treatment.
- Prasugrel and ticagrelor was superior in reducing ischemic endpoints compared to clopidogrel; however, clopidogrel is still widely used.
- Current international guidelines recommend ticagrelor as first-line therapy, regardless of age, based on information from the PLATO trial.
- In the ATLANTIC trial, patients ≥ 75 years received ticagrelor and no interaction between ticagrelor administration and age on ischemic or bleeding outcomes were observed.
- Prasugrel is not recommended in elderly patients due to lack of clinical benefit.
- Cangrelor is the only available intravenous platelet inhibitor.
- A subgroup analysis on the treatment of cangrelor in elderly patients revealed no significant differences in clinical outcomes between patients aged <75 years vs. those ≥ 75 years. No differences in severe bleeding with cangrelor or clopidogrel patients was observed.
- Cangrelor may be considered at the time of PCI in ACS elderly patients not previously treated with an oral platelet inhibitor or in those unable to absorb oral agents.
- When considering platelet therapy, other factors including presence of chronic kidney disease, low body weight, concomitant oral anticoagulant, or prior bleeding events should be considered.

Platelet function testing in elderly patients

- The ANTARCTIC trial randomized patients aged ≥ 75 years to oral prasugrel 5 mg daily, with dose or drug adjustment in the case of inadequate response, or oral prasugrel 5 mg daily with no monitoring. The individualized approach did not reveal a benefit of platelet function testing on the clinical endpoint among elderly ACS patients.
- In the TROPICAL ACS trial, the impact of age on clinical outcomes following guided de-escalation of antiplatelet treatment in ACS patients did not reveal a difference in effect.
- Therefore, routine platelet function testing in elderly patients is not recommended to adjust antithrombotic treatment.

Conclusions

- A multidisciplinary, patient-centered approach is needed to determine the optimal course of therapy for elderly patients with STEMI.