

Explaining inequalities in receipt of care in the older patient with acute coronary syndrome

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Introduction

The world's population is ageing and patients with acute coronary syndromes (ACS) are presenting later in life such that a third or more are now aged ≥ 70 .(1) ACS mortality rates are higher in older patients(1) and absolute benefits of treatment are, therefore, potentially greater if the balance against harms remains favourable. Randomised trials of both invasive and pharmaceutical ACS treatments have confirmed that efficacy extends to the oldest patients(2-3) yet observational studies continue to show that they are less likely than their younger counterparts to receive these evidence-based therapies.(4) Potential reasons for this include the supervision of their care by non-specialists, multiple co-morbidities that limit treatment options and increased complications from treatment that occur more commonly in older patients. Whether the risk-treatment paradox that characterises the care of older patients with ACS is truly paradoxical or whether it is a reflection of appropriate management decisions is an important question that has not hitherto been answered.

Making the diagnosis and assessing the prognosis of ACS in the older patient

The clinical presentation of ACS is often atypical in older patients(5) and the initial electrocardiogram (ECG) is often less commonly diagnostic in the older ACS patient;(6) thus greater reliance is placed on the cardiac troponin assay for making the diagnosis. However, elevated troponin levels may occur incidentally in the absence of ACS or conditions such as myocarditis, pulmonary embolism or sepsis.(7) These incidental troponin rises are associated with longer hospital stay and a prognosis that is little better than type 1 ACS in older age groups.(8-9) Contemporary definitions define many of these patients as having type 2 ACS but their appropriate management remains uncertain.(10) Angiographic studies often rule out coronary luminal obstructions disease(11) and this raises legitimate questions about the value of coronary angiography and secondary prevention treatment. Given the higher prevalence of type 2 ACS in older age groups, further exaggerated by the availability of high sensitivity troponin assays, it might seem understandable that they are under-treated by conventional guideline standards. Nevertheless, this under-treatment is not necessarily right, particularly given the adverse prognostic correlates of just minimally raised troponin levels in older patients.(12)

The older ACS patient and receipt of specialist care

Only about 9% of clinical trial populations are aged ≥ 75 compared with 35% of real-world hospital populations. (13) This has important consequences for the generalisation of trial findings and has caused uncertainty among clinicians about optimal treatment strategies in the elderly ACS patient. A recent small trial that randomised only patients aged ≥ 80 with non-ST elevation myocardial infarction or unstable angina showed that an invasive strategy was superior to conservative management in the reduction of a composite of myocardial infarction, need for urgent revascularisation, stroke, and death.(14) Nevertheless, the evidence base for older age groups is sparse and there remains a need for more real-world data to resolve uncertainty about optimal treatment strategies. Large national registries that record information on unselected ACS patients can meet this need by providing representative real-world populations with high generalisability and statistical power.(15) ACS registry studies confirm incremental reduction in the use of evidence-based therapies with increasing age while showing that intensive, guideline recommended treatment is no less effective in older compared with younger age groups for improving survival.(4) This is despite a greater frequency of physiological impairment (frailty), psychological and cognitive impairment, physical disability and co-morbidity which enhance the age-related risk from such treatment.(6) Age itself, therefore, should never be a reason for withholding treatment but in clinical practice, treatment decisions may not be straight forward and although careful consideration of likely effects on hard endpoints is important, so too are effects on less tangible endpoints like symptom control and quality of life.

In older patients with ACS, co-morbidities are a major determinant of management and outcomes but appear to have little impact on the beneficial effects of guideline recommended treatments.(16) Complications of treatment such as bleeding are not substantially more common(4) and although intolerance to drugs like ACE-inhibitors may require cautious dose titration based on the predisposition of older patients to renal dysfunction and hypotension, there is usually no reason why treatment choices should be significantly different compared with younger age groups. Specialist cardiologists appear to understand this because when they, rather than generalists, supervise care of older ACS patients, proven therapies, including invasive strategies and secondary prevention drugs, are more likely to be prescribed resulting in lower mortality rates.(17) A problem for older ACS

patients, however, is that they are less likely than their younger counterparts to benefit from the opportunity of specialist cardiological care.(17)

A fair inequality?

The default position for all ACS patients, regardless of age, should be one of management equity. Nevertheless, triage of frail elderly patients to a conservative management strategy may not be inappropriate if judgement is based on biological, rather than chronological age. If local policy results in management being deferred to generalists or specialist geriatricians, it is essential to make available guidance on evidence-based strategies and how these might be modified to meet the needs of elderly frail patients with co-morbidities. There is an important need for cardiologists and others involved in the care of ACS patients to understand the distinction between management strategies that prolong life and those that prolong death. ACS guidelines, quite appropriately, focus largely on pharmacological and interventional strategies that reduce mortality but in future will need to broaden their focus to take more account of the special needs of those elderly patients who are frail and burdened with multiple co-morbidities. This is not a call for age cut-offs in selection of ACS management strategies but a realisation that all-cause mortality may not be as relevant an outcome to some older patients as other end-points including quality of life, symptom status, tolerance to medication, disability, repeated hospitalisation and return to independent living.(6) Tailoring treatment to meet these end-points must take account of the harmful effects of poly-pharmacy in the elderly and the increased risks of coronary revascularisation procedures. However, these considerations will not always result in a more conservative management approach, revascularisation, for example, producing greater gains in health-related quality of life in older than younger patient groups.(18)

In discussing management options with elderly ACS patients, physicians must provide appropriate balance that takes account of biological age without over-estimating risks or underplaying potential benefits in terms of future quality of life. Decision-making is complicated by wide gaps in the evidence base, current risk scores, for example, taking no account of factors such as functional capacity and cognitive status that are crucial to the older patient. Newer biomarkers such as frailty are now being used increasingly by clinicians for evaluating the appropriateness of more intensive care in older patients with ACS and already there is evidence that they provide independent information about prognosis.(19)

Conclusions

Older patients with ACS commonly present atypically and the diagnosis may be further challenged by non-specific ECG changes and incidental troponin elevations. Frailty and multiple co-morbidities, together with under-treatment by non-specialists, contribute importantly to adverse outcomes. Gaps in the evidence-base for interventional and secondary prevention treatments are only now beginning to be filled by studies that are taking advantage of the wealth of data in national registries. These studies confirm that treatments for ACS are no less effective in older compared with younger age groups, and provide no justification for treatment selection by chronological age. However, the requirements of frail elderly patients with multiple co-morbidities are not the same as those of younger fitter patients and clinicians involved in their care must take account of biological age in making their management decisions. Outcomes apart from mortality are often of greater importance to such patients who may not require the intensive management recommended by guideline groups in order to achieve the symptom relief and quality of life they wish for. There is now an important need for new ACS studies with outcomes relevant to the frail and elderly that will inform future guidelines and provide these patients with the care they and their families want.

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