

How to Improve Clinical Outcomes and Reduce Cardiovascular Risk in Older People with Cardiovascular Disease: Bridging Evidence Gaps

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Abstract

The geriatric population is greatly impacted by cardiovascular disease. Thus, it becomes essential to ‘geriatricise’ the cardiologist through the dissemination of geriatric cardiology. In the early days of geriatric cardiology, it was discussed whether it was simply cardiology ‘well done’. Today, 40 years later, it seems clear that this is indeed the case. Patients with cardiovascular disease usually have several chronic conditions. Clinical practice guidelines often address a single condition and do not provide sufficient guidance for patients with multimorbidity. There are several evidence gaps regarding these patients. Physicians and members of the care team need a multidimensional understanding of the patient to better promote the optimisation of care. It is important to understand that ageing is inevitable, heterogeneous and increases vulnerability. Caregivers must know how to assess elderly patients in a multidomain practical way and how to recognise the factors that may have implications on treatment.

Keywords

Ageing, elderly, cardiovascular diseases, multimorbidity

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The geriatric population is rapidly increasing and is greatly impacted by cardiovascular disease. Thus, it becomes essential to ‘geriatricise’ the cardiologist through the dissemination of geriatric cardiology. In the early days of geriatric cardiology, it was questioned whether it was simply cardiology ‘well done’. Today, some 40 years later, it seems clear that this is indeed the case. Some principles of geriatric cardiology go beyond cardiology and can be applied to good clinical practice in general. For example, prioritising the patient over the disease, assessing multiple clinical and psychosocial domains, considering the individualisation of care, and sharing decisions.

Making appropriate decisions for the elderly requires wisdom, experience and common sense. Robust evidence is lacking for almost everything, and consequently, the recommendations in the guidelines are often relatively weak. Aggressive and exaggerated management, on the one hand, as well as omission, on the other hand, and depriving the patient of examinations or interventions, should both be avoided.

Knowing the changes and peculiarities promoted by ‘normal’ ageing is essential to reach balanced decisions.¹

Ageing is Inevitable and Increases Vulnerability.

Ageing is neither chronological nor homogeneous. Chronological age is useful for demographic and epidemiological analysis. Biological, functional, social and psychological ages are other ages that express the various dimensions of ageing.

The speed and intensity of aging-related changes depend on many factors in addition to time. Diseases, sequelae, lifestyle, genetics and environment interact in a variable way over time. This interaction promotes great heterogeneity. It is easy to understand how elderly people of the same age can be very different.

Despite this complexity, we can admit that ‘well-practised medicine’ can contemplate the multiple factors involved in the pathogenesis and progression of arterial diseases so prevalent in the elderly. Controlling high blood pressure is a good example, as it breaks a vicious cycle of ageing arteries, hypertension and acceleration of arterial changes.

Psychosocial factors are relevant to vulnerability. Many elderly people suffer economic difficulties and social isolation, with loss of networks and support. Thus, they are particularly prone to developing depression, anxiety, negative psychological profiles, pessimism and lack of life goals.

It is noteworthy that there is a bidirectional relationship between cardiovascular disease and mental illness. In fact, patients with coronary heart disease or heart failure experience depression much more often than the general population.² In addition, there is evidence that cardiovascular risk factors may favour the development of cognitive decline and dementia.³

Evaluation

The clinical evaluation of the elderly must be careful and involves multiple biopsychosocial domains. Clinical presentations in these patients involves

atypical manifestations of diseases, concomitance of several diseases (comorbidities) and subclinical disease, present in approximately 40% of those aged >65 years.⁴

Basic Clinical Assessment

Communication difficulties often arise, and impair the exchange of information about past illnesses, medications and allergies.

The interpretation of symptoms and signs is more difficult for the elderly. For example, fatigue, tiredness, dyspnoea and low exertion tolerance are frequent and non-specific manifestations. In MI, typical chest pain occurs in less than half of patients. Moreover, chest pain can be musculoskeletal, digestive and even emotional.

In contrast, elderly patients considered asymptomatic are often not free of symptoms. In patients with severe aortic stenosis considered for intervention, it has been suggested that up to one-third of patients were erroneously classified as asymptomatic.⁵

Blood pressure should be measured in an orthostatism routinely. Approximately 20% of the elderly have orthostatic hypotension, which should be taken into consideration for therapeutic decisions.

The interpretation of murmurs is more difficult, as they can be caused by valvular changes without clinical repercussion, while murmurs caused by real valvular diseases may have less typical characteristics than in younger patients. Auscultation of pulmonary rales may have cardiac or pulmonary causes, or both. A palpable liver may be caused by changes in thoracoabdominal morphology and not by actual hepatomegaly. Lower limb oedema is common and may have multiple aetiologies.

Complementary Examinations

The complementary examinations are important for diagnostic and prognostic purposes. However, the realisation is often more difficult, and specificity is lower. Although the criteria for interpreting examinations do not change, the definition of standards of normality for the elderly is relatively fragile.

In fact, the American College of Cardiology, National Institute on Aging and American Geriatrics Society promoted a workshop on the topic entitled 'Cardiovascular Biomarkers and Imaging in Older Adults'. A detailed document of that meeting was published.⁶

The application of the tests must take into account scenarios of multimorbidity, frailty, polypharmacy, cognitive decline and reduced life expectancy. Ultimately, it depends on multidimensional evaluation and sharing of decisions.

We are living in an era of an excess of tests requested for the elderly. It leads to 'overdiagnosis' and the risk of an 'epidemic' of preventive examinations that may generate more risks than benefits and may result in the diagnosis and treatment of diseases that would never cause bother.

However, we must consider that both tests and treatments have evolved a lot. We cannot be overly optimistic nor overly pessimistic regarding advances in medicine: we must be cautious, but not remiss in our decisions. In contrast, we must analyse and expose our opinions to colleagues who indicate examinations and procedures (e.g. invasive or with contrast) with which we do not agree. We must also share and guide patients regarding examinations (e.g. prostate, colonoscopy,

angiogram of the coronary arteries) and treatments (e.g. vitamins, supplements, hormones) that they want to undergo without plausible bases. Doing too much or too little has physical, psychological, social and economic consequences. It is not easy to adapt choices when we live in the 'era of making'.

Multidimensional Assessment

Global Geriatric Assessment is a 'mantra' in geriatrics and gerontology. However, it is necessary to make this assessment feasible in practice. It is essential to know which are the essential domains, to choose the way and the tools to carry it out. Often, objective tools are not used, and the assessment is purely subjective, especially in outpatient care. Subjective judgement can often lead to misconduct. However, an objective ascertainment of these tools is lacking. To be feasible and practical, multidimensional assessment should take into consideration the evaluation priorities, the preferences of patients and their caregivers, and should seek to select the domains since many of them can be dismissed, while others, such as hearing loss and falls, are always recommended.

In 2021, Tinetti et al. described a structured process by which we can identify the life goals of older adults with multiple chronic conditions, as well as their healthcare preferences. For this, the authors interviewed elderly people with multiple comorbidities. The most frequently reported goals were activities with family and friends, shopping, exercise, and independent living. Nearly 20% of participants felt they were taking too many medications, 35% reported discomfort with medications, 9% said they were fed up with going to too many doctors and 14% refused procedures.⁷ An interesting option is the possibility for patients to carry out a self-assessment of health priorities following the guidance described on the MyHealthPriorities.org website.

Therapeutic Implications

The multiple facets of each elderly patient and the lack of evidence on indications and outcomes of treatments and interventions reinforce the need to make decisions based on 'well-done cardiology'. We live in the 'age of doing', in which treating and intervening are preferential choices, but they may not always be the best way. The elderly are more susceptible to iatrogenia.

The optimisation of drug prescriptions must consider pharmacological changes, polypharmacy, high-risk drugs and adherence. In general, it is recommended to use smaller doses, simplify prescriptions, and take into account drug interactions and possible adverse effects. To achieve the expected results requires individualisation, guidance and education for patients and caregivers, as well as close monitoring during the evolution.

Vulnerability to unwanted drug effects is clearly evidenced by some data. In fact, 30% of emergency visits related to adverse drug effects occur in elderly patients, and 40% of them involve hospitalisation. Of these visits, 60% are caused by anticoagulants, antidiabetics and opioids, which places these groups of drugs as high risk and deserving of special attention.⁸

Opioids and other drugs acting on the central nervous system are widely prescribed for the elderly, despite being associated with a higher risk of falls, sedation and death. In the US, it is estimated that the use of these drugs reaches 70% of the elderly hospitalised in long-stay institutions.⁹

Valuable guidance on drug use is provided by the Beers Criteria, which are periodically updated by the American Geriatrics Society.¹⁰

In general, therapeutic goals should be flexible, less strict and individualised, considering life expectancy, global assessment and preferences.

Targets for arterial hypertension and diabetes are good examples: for certain patients, systolic blood pressure goals >140 mmHg and glycated haemoglobin levels of ≤8 may be tolerated.^{11–13}

In the primary prevention of cardiovascular disease, the definition of therapeutic goals is hampered by the limitation in risk stratification for people aged >75 years. Furthermore, subclinical disease, a risk factor in itself, somehow overlaps primary prevention with secondary prevention.

Improving Outcomes in the Elderly

On 10 December 2019, the American College of Cardiology promoted a meeting with a broad set of stakeholders focusing on the real-world challenges of managing patients with atherosclerotic cardiovascular disease and multimorbidity. The need for expert consensus guidelines regarding the management of these patients was identified. The document addressing the questions raised during the meeting has since

been published.¹⁴ In summary, it shows that the clinician needs a multidimensional approach to make therapeutic decisions and optimise care. The patients' goals, priorities and preferences should be included in the decision-making process. For a patient with a normal or nearly-normal life expectancy and high functional capacity, adherence to guideline-based care to reduce morbidity and mortality may be best. In contrast, for patients with end-stage disease, the goals of care may instead focus on trade-offs, deprescribing or de-escalation and symptom management. In most cases, care decisions do not shift suddenly; rather, they evolve gradually over time. A four-domain framework (medical, mind and emotion, physical functioning, social and physical environment) should be used to determine and incorporate patient preferences and goals of care in the decision-making process.

Conclusion

Elderly care transcends the limits imposed by specialities or subspecialties. It is necessary to produce and disseminate knowledge to 'geriatricise' every health professional, as well as society in general. The optimal care of an elderly person is a challenge, an artisanal process that represents well the practice of the art of 'well-done medicine'. □

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