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Heart failure management of the elderly patient: focus on frailty, sarcopaenia, cachexia, and dementia: conclusions

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With the ageing of populations heart failure is becoming more common and more complex. It is affecting ever older patients and the number of prevalent comorbidities is rising. Even as we continue to gain success in large-scale clinical trials with more effective therapies so our patients are becoming more complex. One of the biggest challenges is the effect of age. Frailty, comorbidity, sarcopaenia, cachexia, polypharmacy, and cognitive decline are all challenging our patients as never before and these challenges will be difficult for cash strapped health care systems to manage. For these reasons, the Heart Failure Association brought together a panel of experts to debate and review this complex area, championing the need for us to establish better ways of caring for the patients of the future.

Epidemiology and the effects of age

Heart failure (HF) and the comorbidities that accumulate in the HF patient are disorders of the elderly[1] with mortality and morbidity steeply increasing with age.[2] Younger HF patients have the type of HF that was studied in the major trials that proved the benefit of angiotensin-converting enzyme inhibitors beta-blockers and MRA's. Older HF patients, in contrast, have usually a different disease (commonly HFpEF) and more comorbidities,[3] so that the trials we have are less applicable to their situation.[4] The prognosis of HF remains very poor with much residual disability and especially now in the older typically HFpEF type patient we see an increasing number of non-cardiovascular comorbidities complicating management and prognosis.[5] Although we preach that age should not be a factor when considering which HF treatments to prescribe, in registry after registry we see it still is, largely because the major trials excluded real-world older patients with multiple comorbidities.[6–8] Among older HF patients, women and comorbidities predominate, including hypertension,[9] diabetes,[10] lung disease,[11] coronary disease,[12] renal failure,[13] sleep disordered breathing,[14,15] anaemia,[16] and iron deficiency predominate.[17] The older patient, in addition to not being in the trials, is often more prone to polypharmacy, medication errors, and side effects.[18] Factors such as dementia and cognitive decline, anorexia,[19] muscle wasting,[20–22] and frailty[23–25] all of which more common in the elderly[26] may impact on the risk/benefit of treatment given.[27] The older HF patients needs are not just for mortality reducing therapies, but also for quality of life enhancement, well designed end-of-life care and the involvement of their carers in decision-making throughout the disease process.[28]

Drug therapy in the older or frail HF patient

In the vast majority of HF clinical trials elderly subjects are underrepresented.[29] Although older subjects can benefit also benefit to an analogous extent very few studies have been specifically recruited older patients.[30,31] Therefore, guideline recommendations, at least for HFrEF do not differ by age groups. Yet on average the older HF patients is more likely to be female and have a HFpEF pattern of left ventricular disease. Like the elderly, women have been

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significantly less commonly entered into clinical trials. For such patients, elderly with HFpEF there is no established life-saving therapy at all, and the therapeutic strategy is focused on control of HF symptoms and treatment of comorbidities.[9,12,32] In addition many confounding comorbidities make treatment more difficult; these include iron deficiency,[33] muscle wasting,[20,21] and frailty, many making drug side effects[18] more likely. Although we are beginning to address the specific problems of drug therapy in the elderly, much remains left to do to improve the quality and appropriateness of our care in this vulnerable group[34] such as by planning specific care plans for older or frail HF patients.[35]

Sarcopaenia and cachexia in heart failure

Skeletal muscle is frequently abnormal in HF syndromes and this weakness and wasting can be severe. When isolated to muscle it is termed sarcopaenia, but when it affects all body also fat and bone tissue it is commonly termed cachexia (clinically defined as unintentional weight loss, with or without skeletal muscle wasting, of at least 5% of baseline weight during the previous year[36]) Cachexia is characterized by an abnormal catabolic/anabolic balance[37] and is seen frequently in many chronic diseases including chronic heart failure.[38,39] It is frequently accompanied by a diverse range of changes such as increased systemic inflammatory activity,[40] autonomic dysfunction,[41,42] up-regulation of the renin–angiotensin axis,[43] and dysregulation of the immune system.[44] Consequently, skeletal musculature is also frequently negatively affected, resulting in relative and absolute sarcopaenia.[45,46] So far no drug therapy has been shown to reverse either sarcopaenia or cachexia complicating HF but exercise training programs have shown beneficial effects in limiting muscle loss[47] and nutritional supplementation may also be helpful.[48]

Dementia and cognitive impairment in heart failure

Cognitive impairment can occur commonly in HF especially with advanced age.[49,50] It affects cognition, attention, memory, language, psychomotor function, and visuospatial acuity.[51,52] Poor cerebral perfusion and ischaemic insults are thought to be instrumental in its genesis, but much remains unknown.[53,54] Clinically, it is more common in the presence of hypertension, stroke, atrial fibrillation, metabolic abnormalities, depression, anaemia, and iron deficiency.[55,56] Monitoring and screening for cognitive decline can pick up subtle cases which can be addressed early. A hospital admission can precipitate an acute worsening, often making subsequent care more difficult.

Very little is said in most HF guidelines concerning the management of cognitive decline, dementia or depression, beyond interdisciplinary approaches and preventive care. Many studies have suggested worse outcomes, a poorer quality of life, and increased hospitalization rates in HF patients with coincident depression.[57]

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