1

Introduction

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Key messages

- The problems associated with treating heart failure in older patients are more diverse and complex than in those who are younger.
- The paucity of evidence-based guidelines for treating older patients results in many having suboptimal management.
- The expectations of older and younger patients are broadly similar.

1.1 A working definition of heart failure
(see also Chapter 5)

There have been numerous attempts to define heart failure. Some are convoluted and others barely intelligible or else impractical [1]: none has been generally approved. This situation has arisen for two reasons. First, the underlying defect in all cases of heart failure – the inability of the left ventricle to eject sufficient blood to meet the body’s metabolic needs – is not exclusively caused by myocardial damage; it can result from diseases of the pericardium, endocardium or great vessels [2], and a concise definition to incorporate all of these pathologies is elusive. Second, there is no general agreement about what, in objective terms, constitutes left ventricular impairment.
The European Society of Cardiology: Guidelines for the Diagnosis and Treatment of Chronic Heart Failure [3] have taken a pragmatic approach to this by identifying the essential components of the syndrome of heart failure as follows:

- Symptoms of heart failure, typically breathlessness or fatigue at rest or on exertion or ankle swelling, plus
- Objective evidence of left ventricular dysfunction at rest: this is usually obtained by means of echocardiography.


This is clearly not a definition in the conventional sense of the word; it is a précis of the diagnostic criteria.

The Scottish Intercollegiate Network Guideline SIGN 95 [4] has, however, provided a succinct, but unavoidably imprecise definition:

“Chronic heart failure is a complex clinical syndrome that can result from any structural or functional cardiac or non-cardiac disorder that impairs the ability of the heart to respond to physiological demands for increased cardiac output.”

1.2 What do we mean by ‘older people?’

There are many occasions in medical and legal practice, and in the provision of public services, when there is a need to know an individual’s age. Although such specific information is unnecessary in the context of this book, it is important to identify in broader terms the age group of the patients we will be discussing and to understand why it has been chosen.

In the US and the UK the word ‘elderly’ usually refers to people of retirement age and above, as does the ubiquitous use of the phrase ‘heart failure in the elderly’ in the medical press. But many current 65- and 70-year-old people, quite rightly, do not regard themselves as ‘elderly’ (the meaning of which is explained in vague terms as ‘somewhat old; past middle age’ [5]), although logically they would accept that they are ‘older’. We will therefore use this term in place of ‘elderly’ with all of its negative connotations.

When an age limit is set for a particular purpose or action, it usually implies that adults who are above that age: (i) may be unable to safely engage in the activity in question; (ii) that existing rules or regulations cannot or should no longer apply to them; or (iii) they are of an age when additional medical, financial or social support may be needed. By and large, in the United Kingdom these statements are applied to those who have reached the current State pension age. This is therefore the age at
which it is generally accepted or assumed that a wide range of biological changes begin to occur.

There are arguments both for and against using this as the age at which we might be called ‘older’.

Epidemiological and social data suggest that many 65-year-olds are biologically, socially and functionally younger than this:

- We now live considerably longer than when the first contributory pension scheme was introduced in the UK in 1925. At that time, the average male life expectancy beyond the age of 65 was approximately 4 years, whereas now it is more than 15 years [6].

- Increasing numbers of people remain in employment and/or regularly engage in physically and intellectually demanding activities well beyond the traditional retirement age.

- In the medical context, the older people become, the more heterogeneous they become physiologically and functionally. It is now recognized that with respect to survival, biological age is more important than chronological age [7].

However, not everybody over the age of 65 is biologically young, and our objectives in writing this book are to highlight and to address the numerous important differences between younger and older patients with heart failure.

- The pathological changes, and the normal aging processes which are responsible for these differences are initiated well before the current retirement age, and it is in the seventh decade of life that their impact in causing an escalation in the prevalence of heart failure becomes evident.

- Most clinical trials on which the management of heart failure is based effectively excluded patients beyond their mid sixties. As a result, most information on which diagnosis, treatment and management are based is skewed towards the 20% of the heart failure population aged under the age of 65.

- We are surviving and remaining active and healthy for longer, but epidemiological reports show that we also spend longer in poor health. In fact, the prediction is that heart failure in older people will become more – not less – prevalent during the coming decades (see Chapter 2).

Consequently, because of the epidemiological data and our objectives, and despite the evidence that many of us are ‘getting younger’, we made a pragmatic decision to accept what is in effect the existing widely accepted ‘definition’ of elderly: we will use ‘older’ to describe patients above the age of about 65–70 years.
1.3 The expectations of older patients

In general terms, the natural history of heart failure is the same irrespective of age; a symptomatic improvement in response to treatment, a period of stability and, after a variable time, progressive deterioration often punctuated by periods of decompensation resulting in hospitalization; during this period, up to 50% of patients die suddenly and unexpectedly.

Most older patients want the same outcomes from their treatment as do younger patients — symptom relief, a better quality of life and an improved prognosis. The optimum means of achieving these objectives are also the same: guideline-based medication (although most of the medicines were evaluated in younger patients), plus surgery, interventional treatments and palliative and supportive care when appropriate.

However, when patients are old and frail they may regard treatment which offers an improvement in the quality of their remaining life as being preferable to increased longevity, especially as they may have comorbidities which are more distressing than their heart failure. Consequently, they may prefer more conservative care, whereas a biologically young older patient may wish, and is entitled, to be considered for the same surgical or interventional treatments offered to younger patients (see Chapter 10).

1.4 Age-related problems in heart failure treatment and management

Although the principles of treatment and management are independent of age, the similarities between the care of younger and older patients effectively end there. The problems faced by older patients, their families and friends, and by the health care teams caring for them, are more diverse and complex than those of younger patients. They affect all aspects of treatment and management and have important implications for the strategic planning of future services (Table 1.1).

The effective management of older patients requires a clear understanding of each of these problems, of how they differ from those in younger patients, and of how best they can be addressed:

- Heart failure is more common, and the prognosis worse, in older patients.
- The prevalence of heart failure is increasing, and will continue to do so as life expectancy – and specifically survival from myocardial infarction – continue to improve.
- Significant anatomical, physiological and biochemical changes occur in the cardiovascular system with aging. These age-related changes are responsible for
Table 1.1  Age-related differences between older and younger patients with heart failure which affect diagnosis, management and treatment.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Young/middle-aged</th>
<th>Older</th>
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<tbody>
<tr>
<td>Prevalence</td>
<td>1–2%</td>
<td>8–10%(^a)</td>
</tr>
<tr>
<td>Incidence</td>
<td>2/1000</td>
<td>30/1000(^a)</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Bad</td>
<td>Worse(^a)</td>
</tr>
<tr>
<td>Left ventricular systolic function</td>
<td>Usually reduced</td>
<td>More often only mildly reduced or preserved(^a)</td>
</tr>
<tr>
<td>Aetiology</td>
<td>Congestive cardiomyopathy more common</td>
<td>Aortic and mitral valve disease more common(^b)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Easier</td>
<td>More difficult(^c)</td>
</tr>
<tr>
<td>Treatment provision</td>
<td>Improving</td>
<td>Remains poor(^d)</td>
</tr>
<tr>
<td>Comorbidities</td>
<td>Less common</td>
<td>More common(^e)</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>Common</td>
<td>More common(^f)</td>
</tr>
<tr>
<td>Quality of life</td>
<td>Poor</td>
<td>Worse</td>
</tr>
</tbody>
</table>

Adapted from Reference [8].
\(^a\) See Chapter 2.
\(^b\) See Chapter 4.
\(^c\) See Chapter 5.
\(^d\) See Chapter 6.
\(^e\) See Chapter 8.
\(^f\) See Chapter 12.

differences in the aetiology of heart failure in older and younger patients; they affect disease progression and affect treatment strategies.

- These same changes are partly responsible for the diagnostic difficulties encountered in older patients.
- Evidence that the standard treatments for heart failure are safe and effective in older patients has been slow to appear, and even slower to be translated into practice. This is reflected in a relative lack of specific advice in published guidelines about their management.
- Some relatively young patients have comorbidities, which adversely affect disease progression, treatment and/or the quality of life. However, multiple comorbidities are the norm for older patients.
- Heart failure is now the commonest cause of admission to hospital in the aging population.
- The quality of life is poor for all patients, but more so for those who are older.
- Providing acceptable end of life care for older patients is more complex and time consuming.
1.5 The level of evidence for treating older patients

Many of the recommendations – and much of the advice – for the treatment and management of heart failure which is provided in published guidelines is based on meta-analyses of randomized controlled trials. The level of evidence for much of this advice is graded as 1+ + to 1− [4]; older patients were excluded from most of these studies (see Chapter 6). Consequently, much of the advice given in this book cannot be based directly on the landmark randomized controlled trials as it is for younger patients. It is therefore based on:

- Subgroup analyses from these reports
- Other studies from which older patients were not excluded
- Studies specifically of older patients
- Examples of recommended best practice based on the clinical experience of experts in the field.

International and national guidelines classify this level of evidence (Table 1.2) mostly as level 2+ to 4, and recommendations based on such evidence is graded as C and D [4]. Basing advice on this level of evidence is clearly less compelling than that of levels 1+ + to 1−, but it should be noted that up to 40% of the evidence presented in published guidelines is similarly graded [4].

<table>
<thead>
<tr>
<th><strong>Table 1.2</strong> Grading of levels of evidence and of recommendations [4].</th>
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<tbody>
<tr>
<td><strong>Levels of evidence</strong></td>
</tr>
<tr>
<td>2+</td>
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<tr>
<td>2</td>
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<td>3</td>
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<td>4</td>
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<tr>
<td><strong>Grade of recommendations</strong></td>
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<tr>
<td>C</td>
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<tr>
<td>Extrapolated evidence from studies rated as 2+ +</td>
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<tr>
<td>D</td>
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<tr>
<td>Extrapolated evidence from studies rated as 2+</td>
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References


