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Physiological monitoring in the complex multimorbid heart failure patient - Conclusions

Michael Böhm[1]*, Andrew J.S. Coats[2], Ingrid Kindermann[1], Ilaria Spoletini[2], and Giuseppe Rosano[2]

[1]*Klinik für Innere Medizin III, Kardiologie, Angiologie und Internistische Intensivmedizin, Universitätsklinikum des Saarlandes, Saarland University, Kirrberger Str. 1, 66421 Homburg/Saar, Germany; and*
[2]*Department of Medical Sciences, Centre for Clinical and Basic Research, IRCCS San Raffaele Pisana, Via della Pisana 235, 00163 Rome, Italy*

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Comorbidities are increasingly recognized as crucial components of the heart failure syndrome. Main specific challenges are polypharmacy, poor adherence to treatments, psychological aspects, and the need of monitoring after discharge. The chronic multimorbid patient therefore represents a specific heart failure phenotype that needs an appropriate and continuous management over time. This supplement issue covers the key points of a series of meeting coordinated by the Heart Failure Association of the European Society of Cardiology (ESC), that have discussed the issues surrounding the effective monitoring of our ever more complex and multimorbid heart failure patients. Here, we present an overview of the complex issues from a healthcare delivery perspective.

Introduction

Chronic heart failure is getting more complex, with patients becoming older and accumulating more comorbidities.[1–3] In addition, guideline-directed therapies improve cardiac outcomes[4–6] with the effect that the longevity of heart failure patients increases and the burden of age-related non-cardiac diseases rises in parallel to the duration of the syndrome.[7,8] Non-cardiac diseases have an adverse effect on outcomes and, in particular, on hospitalization rates, with the number of non-cardiac comorbidities having an additive effect of the complication rates.[9,10] Taking into account these issues, a multidisciplinary panel of leading international experts has been organized by the Heart Failure Association of European Society of Cardiology (ESC) to discuss the latest evidence, ongoing research, and controversial issues regarding physiological monitoring in the complex multimorbid heart failure patient. The papers in this supplement reflect the key points raised during these meetings.

General considerations

Drugs used to treat comorbidities can have a negative impact on heart failure outcomes and, in particular, might affect renal outcomes (like non-steroidal antagonists), which in turn affect morbidity and mortality in chronic heart failure.[11] Impaired renal function interferes with guideline-directed medical therapies, which are often dependent on renal function (renin–angiotensin–aldosterone inhibitors).[4] Cognitive dysfunction and depression affect the adherence to guideline-directed therapies and impair healthcare literacy, with detrimental impact on adherence to heart failure therapies.[12–14]

Therefore, the monitoring of the complex multimorbid patient is multidisciplinary. As such, it needs to be performed by heart failure specialists and specialists in other fields using a mutual approach. In particular, this approach needs to be organized in specialized programmes, because these patients have a high rate of

*Corresponding author. Tel: +49 6841 16 15031, Fax: +49 6841 16 15032, Email: michael.boehm@uks.eu

hospitalizations.[15] Beyond this, self-care skills need to be fostered, including patient education and incorporating shared decision-making into the concept of the complex patient care.

Medical adherence

Medical adherence is one of the major precipitating causes of acute heart failure.[16,17] Medical adherence is related to a poor degree of health literacy, cognitive dysfunction, and depression[18] and is inversely related to the number of context to health care providers.[19] Monitoring of drug therapies is usually performed by direct contact of the patients with physicians or healthcare nurses.[20,21] However, telemonitoring approaches have been tested, although most experiences are present in hypertension.[22] Due to the high prevalence of comorbidities, it became clear that the comprehensive heart failure care must involve a multidisciplinary approach (Figure 1).

Management of comorbidities

According to the majority of disease management programmes, a regular patient contact is necessary to obtain signs, symptoms and potentially laboratory tests for the major comorbidities. These include renal dysfunction, hyperkalaemia, anaemia, iron deficiency, thyroid disease, and electrolyte disturbances.[23–26] Even subtle symptoms should be considered and regular physician-patient contacts or heart failure nurse–patient contacts shall be maintained, as recommended in major disease management programmes and heart failure network programmes.[27] In particular, new introduction of drugs such as mineralocorticoid antagonists, in particular in combination with angiotensin-converting enzyme-inhibitors or angiotensin-receptor blockers, should lead to a regular monitoring of electrolytes, which has been insufficiently performed in real-world studies.[4,28]

Education of healthcare providers

Psychological aspects affect healthcare behaviour and medical adherence. Therefore, monitoring should be made by specialists in depressive symptoms and cognitive dysfunction, as both are frequently found in patients with heart failure and in the elderly population. Furthermore, medical devices like implantable cardioverter-defibrillators (assist devices) and concomitant diseases and complications might induce a loss of trust in medical interventions by heart failure patients. Therefore, regular communication including psychological counselling involving families and other care providers is of particular importance. The threshold to contact a specialist for psychological dysfunction should be low (i.e. also in presence of mild symptoms).

Monitoring after discharge

Discharge planning is one of the most important factors to maintain medical care, which has been initiated during an in-hospital stay. Discharge planning should allow patients to see physicians or heart failure nurses within a short period of time to allow them to respond to any changes in signs and symptoms.[27] The change from the in-hospital situation to the out-hospital setting requires close counselling for lifestyle advice in the changing environment.[27] Counselling is not only important shortly after discharge to address the so-called ‘vulnerable phase’. Also long-term follow-up and regular consultation to advise for lifestyle, exercise, medical treatments and to increase patient’s

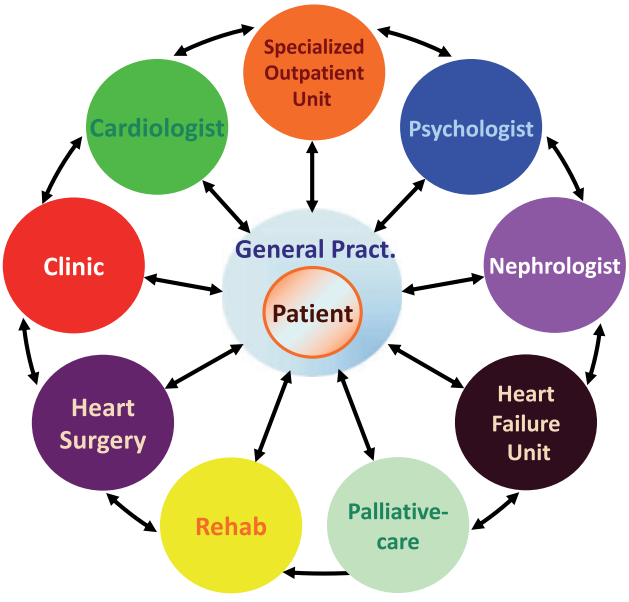

Figure 1 Multidisciplinary care of heart failure patients involving many disciplines to account for multimorbidity and psychosocial demands.

awareness on signs and symptoms of the disease is of crucial importance. The regular consultation should be accompanied by monitoring of laboratory values for renal function, iron deficiency, anaemia, and potentially natriuretic peptide as well as a rigorous physical examination.[4] Patients eligible for telemonitoring or implantable monitoring devices should be carefully evaluated by an expert physician to improve hemodynamic monitoring. Selected patients should be carefully evaluated for these innovative possibilities.

Conclusions

Chronic heart failure patients are commonly burdened by multiple comorbidities, which require a systematic monitoring over time. Key factors to be monitored are lung congestion or total body water monitoring, renal impairment, haemoglobin and serum iron, transferrin and transferrin saturation, sodium, potassium, sleep-disordered breathing, and of course monitoring diabetic control.[29]

Also, there is a growing incidence of non-cardiac comorbidities. Often heart failure patients are burdened by coexisting cancer, with the need to develop evidence-based strategies for monitoring and protecting cardiac function during anti-cancer regimes.[29]

Finally, psychological and cognitive aspects must be carefully monitored over time due to their link with poor adherence and prognosis.

For all these reasons, physiological monitoring in the multimorbid heart failure patient is particularly challenging and upcoming research with clinical trials specifically including old and multimorbid patients are strongly needed.

Conflict of interest: none declared.

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