

# The management of heart failure: a FADOI survey in the setting of Internal Medicine Units

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## ABSTRACT

Heart failure (HF) is a chronic disease characterized by high morbidity and mortality. FADOI conducted a survey aimed at obtaining information on the management of HF in Italy, with particular reference to the Internal Medicine (IM) Units. The questionnaire, containing 32 questions, was sent to the Directors. Up to August 2022, it was possible to analyze data from 140 centers. In 47.4±17.2% of cases with HF, the patients have preserved systolic function; 41% are in NYHA class III, 33% in class IV (33%), 21% and 5% in NYHA class II and I, respectively. The mean length of hospital stay is 9±2.5 days, with an in-hospital mortality of 11.9%±9.5%. After discharge, the re-hospitalizations are 21.3±12.7%. In 44.4% of IM departments, there is a formal diagnostic-therapeutic care pathway. Also, through surveys, it is possible to help hospitals to and optimize assistance to patients affected by HF.

## Introduction

Heart failure (HF) is a chronic disease characterized by high morbidity and mortality. Its prevalence is continuously increasing due to demographic changes and increased survival after cardiovascular events, such as acute coronary syndromes.<sup>1,2</sup>

In Italy, it is estimated that there are about one million patients (pts) affected by this disease, therefore of

high prevalence and with a high rate of hospitalization which determine a significant health and social impact.

Despite diagnostic-therapeutic progress, HF is still to be considered a 'difficult-to-manage syndrome'.

The 'HF Network' includes Cardiologists and other multi-specialist roles. All these figures must necessarily interact with each other, with a relevant role of Internal Medicine (IM), since this setting takes care of the majority of patients hospitalized for and/or with HF.

In order to evaluate the quality of the assistance to patients with HF, and implementing and optimizing the processes of management, it is useful to have data from real-world.<sup>3</sup>

In this perspective, a significant role can be played by the 'Surveys', that can provide a 'snapshot' of the reality and help identifying possible deficiencies and therefore the need for improvements.<sup>4</sup>

Therefore, FADOI conducted a survey aimed at obtaining information on the management of HF in Italy, with particular reference to the IM Units.

In June 2022, a questionnaire containing 32 questions was sent to the Directors (or in some cases to a direct collaborator) of the IM Units that are part of the FADOI network. Questions were about the epidemiological aspects of HF, the in-hospital management (from diagnostic procedures to pharmacological treatments) and on the implementation of multidisciplinary assistance for inpatients or outpatients. Of the 183 responses received up to August 2022, it was possible to analyze data from 140 centers.

## Results

About 50.5% of the respondents (mainly Directors of IM Units) are over 60 years of age and only 21.2%

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under 50. Their most represented specialties, in addition to IM (100%), are Endocrinology/Metabolic Diseases (20%), Cardiology (18.3%), Geriatrics (15%) and Rheumatology (15%). Hospitals involved in the survey are heterogeneous in terms of number of beds (from 38.8% with <200 beds to 2.5% with >1000 beds) and number of Units of IM present (one in 71.4% of the Hospitals, up to 5-7 Units in 4.8% of cases); a Cardiology department is present in 75.7% of the Hospitals. 31.7% of IM Units have up to 30 beds, while 11.7% have more than 70 beds.

The main areas in which the Departments have particular 'expertise' are, in order, Cardiology (84.9%), Respiratory diseases (57.9%), Endocrinology/Metabolic diseases (36.5%), Gastroenterology (28.6%), Rheumatology (25.4%), Infectious diseases (25.4%), Oncology (9.5%), Nephrology (7.9%).

Consultations made by Internists in other departments and dedicated to patients with HF represent approximately 25.6% of all consultancies made by IM, while in the IM Units external advice is required to the Cardiologist (18.2%) for patients with HF in case of arrhythmias in young patients (52%), acute coronary syndrome (82.6%), need for device implantation (78.2%), need for revascularization (69.6%). In 44.4% of IM departments, there is a formal diagnostic-therapeutic care pathway dedicated to patients with HF. 26.5% of hospitalizations of patients with HF are requested by the General Practitioner. In 23.1% of patients admitted to IM, HF is newly diagnosed. In the opinion of the respondents, around half (48.5%) of patients hospitalized in IM with HF already diagnosed, is not correctly treated. Among all patients affected by HF, 51.1% are hospitalized 'WITH' HF, while 49.9% 'FOR' HF. When different from HF, the most frequent causes of hospitalization among patients with HF are, in order: infection (52.2%), exacerbation of COPD (18.6%), anemia (10.3%), arrhythmia (6.3%), uncontrolled arterial hypertension (6.3%), renal failure (4.3%), acute coronary syndrome (2.0%).

The mean age of patients with HF hospitalized in IM Units is  $76.5 \pm 4.6$  years, and  $55 \pm 11.4\%$  are male. The main comorbidities are arterial hypertension (45.1%), ischemic heart disease (27.4%), atrial fibrillation (8.8), diabetes mellitus (8.0), renal failure (2.7). In  $47.4 \pm 17.2\%$  of cases, the patients have preserved systolic function. Of patients hospitalized with HF, 41% are in NYHA class III, 33% in class IV (33%), 21% and 5% in NYHA class II and I, respectively.

The diagnostic tests usually performed during hospitalization are: ECG (97.7%), chest x-ray (92.2%), echocardiogram (77.8%), natriuretic peptide dosage (81.5%), exercise test (11%).

The mean length of hospital stay is  $9 \pm 2.5$  days, with an in-hospital mortality of  $11.9 \pm 9.5\%$ . Pharmacological treatments (admission vs discharge) include:

thiazide diuretics (18.5 vs 12.6%), loop diuretics (74.1 vs 78.1%), mineralocorticoid receptor antagonists (43.6 vs 57.8%), ACE inhibitors (60 vs 62.8%), angiotensin receptor blockers (39.1 vs 40%), beta blockers (68 vs 77.8%), angiotensin receptor-nephrylysin inhibitor (ARNI) (16.9 vs 23.4%), sodium glucose co-transporter 2 (SGLT2) inhibitors (10.7 vs 19.2%), digitalis (13.3 vs 12.7%), calcium channel blockers (23.2 vs 23.5%), oral or parenteral anticoagulants (46.4 vs 47.6%), antiplatelet agents (56 vs 54.5%), antiarrhythmics (29 vs 26.4%), nitro derivatives (16.2 vs 15.8%), lipid-lowering agents (54 vs 57.9%), hypouricemic agents (32.5 vs 35%).

In the three months after discharge, the percentage of re-hospitalization is  $21.3 \pm 12.7\%$ , mortality is  $12.5 \pm 10.3\%$ , and referral to the Emergency Depts occur in  $23.7 \pm 14.6\%$  of patients. Only for 29.3% of the IM Units there is systematic collaboration with General Practitioners and/or local health facilities. In 44% of the IM Units there is an outpatient clinic for HF: in 27% of these, however, there is no dedicated instrumentation; in 29.2%, on the other hand, the instrumental equipment is available for a correct diagnosis of the disease and the management of its follow-up (e.g., echocardiograph); finally, in 43.7% both instruments and dedicated specialized staff, are available.

## Discussion

There are significant differences among HF patients, making this population heterogeneous in terms of etiology, clinical presentation, comorbidities and some gender-related peculiarities that influence their management. The quality of assistance of patients with HF is a challenging issue, and in this perspective it is very important to know and optimize the organization of the hospital and territory for the treatment of HF. This path must involve several professional figures, in particular the Internist, the General Practitioner and the Cardiologist.

Among the organizational problems, there is a lack of interaction and collaboration between the various specialists as well as logistic problems, with an absence or, in any case, poor communication, and a lack of fluidity in well-traced paths. There is also a difference, often significant, between the various healthcare realities, both in structural and organizational terms. The availability of specific equipment and skills varies from structure to structure (sometimes even within the same hospital) with a consequent not homogeneous management of patients with HF. Our survey shows that a 'non-optimal' adherence to prescribing guidelines still exists, especially in relation to the use of the most recent drugs. In this perspective, as a partially encouraging finding, innovative treatments were implemented on discharge from the IM wards if compared to admission, confirm-

ing the importance of hospitalization as an important moment for optimizing therapy.

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## Conclusions

It is hoped that with the best knowledge of the different healthcare realities and assistance needs, also through surveys, it is possible to help hospitals to standardize, create or improve (where already existing), management paths, and optimize assistance to patients affected by HF.

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