How patients with heart failure are managed in Italy

Michele Senni, Antonello Gavazzi*

Divisione di Cardiologia, Dipartimento Cardiovascolare, Ospedali Riuniti, Largo Barozzi n. 1, 24128 Bergamo, Italy

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Abstract

In Italy, the National Health System is funded from the taxation system of the state. It is organized by general practitioners in the community and specialists in the hospitals. All Italian citizens are registered with one of the general practitioners. Patients with suspected heart failure are generally referred from the family practitioner to a higher level of medical care. Only a minority of patients with heart failure are cared for by cardiologists, either as in- or outpatients. Echocardiography is widely available; nevertheless, few patients admitted to internal medicine divisions receive an echocardiogram compared to cardiology units. The ACE inhibitor usage by Italian cardiologists in patients with heart failure is satisfied, and the use of beta blockers is increasing in Italy at this time. Since only a small proportion of patients with heart failure are followed by cardiologists in Italy, further efforts are necessary until internists and general practitioners could be involved in treatment trials in heart failure. The aim of this approach is to transfer the beneficial effects observed in the trials to clinical practice. European Society of Cardiology.

Keywords: Heart failure; Diagnosis; Management

1. Organization of health service

In 1995, 57300000 people lived in Italy, 51.5% were female and 17% were older than age 65 years. In Italy, in the same year, health expenditure as a percentage of gross domestic product and as power purchasing parity per capita were 7.7% and $1507, respectively. The National Health System is funded from the taxation system of the state. It is arranged into two different levels: a primary care service based on general practitioners in the community and a secondary care service organized in hospitals. All Italian citizens are registered with one of the general practitioners and are free to choose their doctors. Hospitals employ specialist consultants for the diagnosis and treatment of all diseases, and are organized into in- and out-patient facilities.

A minority of Italian residents have a private health insurance. The private health service can be achieved also in National Health System hospitals, which should have a proportion of beds reserved for such patients. Private patients have the privilege of accommodation of a higher quality, shorter waiting lists and freedom of choice of consultants.

Patients in whom cardiac transplantation could be required are referred to 14 cardiac centers which perform heart transplantation in Italy. In 1998, 336 heart transplantations have been performed in Italy. The number of heart donors in 1998 was 284 in northern Italy and 32 in central–southern Italy. The number of donors per million of residents in Italy was 12.3, compared to 15.2 of European mean. These data confirm that in Italy, transplantation represents a solution for just a minority of patients. Hospital cardiology units operating in Italy are 669.
While an intra-aortic balloon pump is utilized in several cardiological or cardiac surgery divisions, implantation of ventricular assist devices, mono- or biventricular, is available in few cardiac surgery centers.

2. Diagnosis of heart failure

Patients with symptoms like shortness of breath, fatigue and ankle edema generally turn to their general practitioner, who tries to focus on performing studies that will allow confirmation of the diagnosis, if the diagnosis of heart failure has a high index of suspicion. To diagnose heart failure, physicians usually elicit a thorough history, perform a physical examination, and obtain a chest roentgenogram, eventually an electrocardiogram, complete blood cell count, creatinine level, electrolytes, and thyroid function. If heart failure is suspected, the family practitioner generally refers the patient to a higher level of medical care. If heart failure symptoms present severely, the patient receives his first evaluation in an emergency center and thereafter completes the diagnostic assessment and treatment into an internal medicine or cardiology division. In the OSCUR survey, held in Liguria, one of the Italian regions, from July to December 1998, of 749 patients with heart failure consecutively enrolled in the study, only 165 (22%) were admitted to cardiology units compared to 584 (78%) to internal medicine divisions [1]. In a recent prospective survey conducted during 3 months in a large Italian community hospital, 354 patients were consecutively hospitalized for chronic heart failure, 97% were admitted in the internal medicine wards and occupied 15% of the beds [2].

In an overview on heart failure hospital admission in Lombardia in 1997, the largest Italian region (8.8 million residents), patients with heart failure were admitted to general medicine in 60% of cases, cardiology units in 25% and intensive care in 15% [3]. A national survey on ischemic disease, heart failure and arrhythmia (EARISA) enrolled all patients admitted to 308 Italian cardiology units [4]. This study lasted 12 days (12–23 February 1996). Over this time, 1089 heart failure patients were enrolled, they had very severe heart failure symptoms since 81% were in the NYHA functional class III–IV, 79% were in urgent status and 40% were admitted to intensive care units.

Generally, clinical evaluation in the hospital includes electrocardiogram, chest roentgenogram, echocardiography, biochemistry and hematology. Echocardiography is widely available in cardiology units, where it can be performed rapidly during the first admission, while this technique is less frequently used by internists, probably because of an access problem. In fact, only 27% of patients with heart failure hospitalized in a large Italian community hospital, 97% in the internal medicine wards, had echocardiography [2]. Accordingly, in the OSCUR study, 37% of patients admitted to internal medicine divisions received an echocardiogram compared to 92% in cardiological centers [1]. Similarly, in the EARISA study, 81% of patients with heart failure underwent an echocardiographic evaluation during the hospitalization in cardiology divisions [4].

It has been estimated from the data of the SEOSI study (survey on heart failure in Italian hospital cardiology units) that in 1 year approximately 190,000 patients with suspected or known heart failure are examined in hospital cardiology units every year, and approximately 65,000 are probably admitted to hospital [5]. With the average length of admission for heart failure in 1994 calculated as being 11.6 days, heart failure would account for approximately 777,000 days of cardiological bed occupation per year. The SEOSI study enrolled all patients with proved or suspected heart failure examined as outpatients or inpatients in 359 cardiology units over a 12-day period. The mean age of the total 3921 patients enrolled was 67 years, with a median of 69 years. These data do not take into account heart failure patients cared for in internal medicine and geriatric units, which are the majority of patients with heart failure admitted as reported from hospital surveys conducted in Udine [2], Lombardia [3], and Padua [6]. The data of Padua, which studied 630 patients admitted for heart failure in 1 year, confirm the preponderance of elderly patients with a mean age of 74.6 ± 6.1 years and the high costs generated by the disease, with a mean average admission length of 9.8 days [6].

3. Chronic heart failure

Prevalence estimates of heart failure in Italy vary widely which reflect the differences in methodology and timing. In 1982, in a random sample of a population (aged 20–64 years) from the Veneto region in Northern Italy, the overall prevalence of congestive heart failure was 20/1000 both in the male and female population [7]. The diagnosis of heart failure was based on data obtained from general practitioners or hospital discharges and use of digoxin. In 1997, a total of 214 patients with heart failure were identified in the actual practice of general practitioners covering 29,959 subjects residing in the region of Calabria, in southern Italy, with a prevalence of 7/1000 [8]. Clinical symptoms and signs were used to classified patients in a simplified version of the Boston score.

Previous studies have reported differences in clini-
cal practices between generalists and specialists with regard to treating patients with heart failure. Heart failure is a complex problem, with a high rate of treatment failures and re-hospitalizations, and therefore is more optimally managed with the guidance of specialists or sub-specialists. In Liguria [1], from January 1996 to December 1997, 6881 patients were hospitalized for heart failure; re-hospitalizations for heart failure were 767 (11%). Among patients with recurrent heart failure, 19% were admitted more than twice. Care of only the minority of patients affected by chronic heart failure is provided by the hospital cardiology units, either as in- or outpatients.

The Italian Association of Hospital Cardiologists (ANMCO) established a nationwide longitudinal database on heart failure starting from March 1995. The participating centers were representative of the Italian network (IN-CHF) of hospital cardiology units. Up to January 2000, data on 11,070 outpatients have been collected in 150 cardiology units, 33.5% of patients were more than 70 years [9]. Ischemic heart disease was the most frequent etiology (39.8%). Dilated cardiomyopathy was considered to be the primary cause in 31.0% of the patients and hypertensive heart disease was the most frequent etiology 39.8%. Diuretics were used in 767 (11%) of the patients enrolled in NYHA class III–IV. The survival of patients with heart failure was poor, only 84.4% remained alive at 1 year. Survival at 1 year of patients in NYHA functional class I–II and of those in class III–IV was 89.5 and 73.1%, respectively. Approximately one-quarter of patients were hospitalized or rehospitalized during the first year of follow-up. Drug therapy is reported in Table 1. Although the ACE inhibitor usage by Italian cardiologists in patients with heart failure was satisfied (80.8%), cardiologists did not frequently titrate their patients to the dosages proven efficacious in trials. Beta-blockers were used in 17.9% of patients. The data recently reported [10] and the BRING-UP study [11] showed an increase in the use of beta-blockers in Italy during the time. The rate of beta-blockers prescriptions increased from 10.3% in 1995 to 18.4% in 1998 (P < 0.001). More significantly, of 2950 patients enrolled in the BRING-UP study in 1998, 32.3% were treated with beta-blockers. Studies such as GISSI or BRING-UP have shown that the beneficial effects observed in the treatment trials can be more easily transferred to clinical practice by means of the widespread participation to these studies by hospital cardiology units [10].

This disease, as previously reported [4,5], is an extremely common clinical condition in elderly patients, with an exponential increase in the prevalence of heart failure with advancing age. In Italy, very elderly patients are mainly cared for in general medicine and geriatrics units and referred to general practitioners for follow-up, only a minority is referred to cardiologists for follow-up. Routine application of Doppler echocardiography in general practice is limited by low accessibility of echocardiographic studies.

4. Financial aspects of the care of patients with heart failure

The impact of heart failure on health care provision has emerged in western countries as a major economic problem. Unfortunately, statistics regarding the prevalence and related costs are lacking. In Italy, 139,659 patients were admitted into hospitals for heart failure in 1997 according to DRG 127, with a mean hospital duration of 10.2 days [12]. Thus, even with conservative estimates of total heart failure admissions, the expenditure in Italy of hospital admissions for heart failure in 1997 was approximately 393,212,000 Euro.

A cardiological visit, electrocardiogram, echocardiography and hematological screening are free of charge for patients affected by chronic heart failure in NYHA functional class III–IV.

5. Conclusion

Survey studies conducted in Italy inpatients with heart failure have shown to be a relevant instrument for responding to public health demands concerning epidemiological evolution, physician behavior, and nationwide activities. Moreover, these studies have demonstrated that cardiologists in Italy follow only a small part of patients with heart failure. The GISSI and BRING-UP studies have illustrated that the use of trials involving widespread hospital cardiology units is a powerful tool in upgrading and in bridging the gap between treatment trials and clinical practice. On the whole, the acquired experience of cardiologists regarding diagnosis and therapy of chronic heart failure is certainly positive. Therefore, further efforts are necessary until this approach could be expanded to

| Table 1 Drug therapy among 6428 patients with heart failure referred to the Italian Network Chronic Heart Failure (IN-CHF) data base [9] |
|---------------------------------|-----------------|-------------|
| Drug                           | No. patients    | %           |
| Diuretics                      | 9247            | 83.5        |
| ACE inhibitors                 | 8943            | 80.8        |
| Digitalis                      | 7198            | 65.0        |
| Nitrates                       | 4368            | 39.5        |
| Anticoagulants                 | 2886            | 26.1        |
| Amiodarone                     | 2196            | 19.8        |
| Beta-blockers                  | 1983            | 17.9        |
| Calcium antagonists            | 1443            | 13.0        |
general practitioners and internists that are mainly involved in the management of patients with heart failure.

References


