Short communication

Withdrawal of active treatments in terminally ill heart failure patients

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A B S T R A C T

Introduction: Heart failure (HF) constitutes a growing public health problem in aging societies: when pharmacological therapies fail, HF can be sustained intensively if patients are eligible for either orthotopic heart transplantation (OHT) or mechanical ventricular assistance, otherwise additional treatments could be inappropriate. In December 2017 Italian Legislator brought in the provisions regarding the end-of-life choices, including indications for withdrawing and withholding life-sustaining therapies. The aim of our study was to provide an overview of the daily practice of our center with regard to terminally ill HF patients. Methods and results: In April 2019 the 7 intensivist cardiologists and 21 nurses of a tertiary ICCU were asked in, to complete a questionnaire relating to a hypothetical terminally ill HF patient for whom the decision to withdraw active treatment had been made. To assess current practice, we also identified patients who died in the previous 12 months. Out of 29 deceased patients, 18 were identified as terminally ill HF, with no indications for therapy upgrading. We observed a striking disparity between belief and practice. Conclusions: Our survey showed that the care of terminally ill HF patients in our ICCU was characterized by aggressive use of medical therapy and invasive technology. The wide disparity between belief and practice could be in part a consequence of lack of professional training, with regard to law, ethics and communication techniques.

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1. Introduction

In these last three decades Western medicine has shown its technological power as never before, but at the same time it experienced a deep crisis of credibility. In this context, it is important to highlight the need to provide health professionals with adequate training in the many ethical and bioethical issues daily raised by clinical practice, with particular attention to the end-of-life, both through national policies and through more targeted local interventions.

In this regard, in December 2017 Italian Legislator brought in the provisions regarding the end-of-life choices, including indications for withdrawing and withholding life-sustaining therapies, corroborating the principle of the patient’s therapeutic self-determination [1].

Among cardiovascular chronic diseases, HF is a progressive condition, constituting a growing public health problem in aging societies [2]. The proportion of hospitalizations that are related to decompen-sated HF also sharply increases after the age of 65 [3]. Moreover, most of these patients die in hospital and only a negligible number of them at home or in hospice [4]. Terminally ill HF patients have significant Intensive Cardiac Care Unit (ICCU) resource utilization near the end of life compared to patients with cancer [5], but there are scant data about management of these patients in ICCU.

The aim of our survey was to provide an overview of the daily practice of our center, which would increase understanding of the last days of life of terminally ill HF patients.

2. Methods

In April 2019, the medical and nursing staff of an 8-bed tertiary ICCU were asked in, to complete a simple, anonymous questionnaire relating to a hypothetical terminally ill HF patient for whom the decision to withdraw active treatment had been made. All participants were asked to mark each listed treatment they thought should be discontinued.

To assess current practice, we also identified the patients who had died from in the previous 12 months: among them 18 were terminally
ill HF patients, mechanical ventricular assistance or orthotopic heart transplantation (OTH) being inappropriate.

Records of all patients were obtained to evaluate how the active treatment withdrawn was managed in the ICCU.

The outcome of the questionnaires was compared with the findings from the records.

As the study consisted of a voluntary staff questionnaire and a retrospective review of patient notes with no intervention ethics approval was not considered necessary and thus was not sought.

Continuous variables were reported as median and interquartile range, whereas categorical ones as number and percentages.

### 3. Results

#### 3.1. Questionnaire

The results of the questionnaire are shown in Table 1.

Of note our data highlights that Law no. 219 is still very little known both by physicians and nurses (29 and 38% respectively). Moreover, the majority of ICCU staff was not satisfied with end-of-life management (15% of physicians and 24% of nurses), mainly because of lack of specific skills and lack of staff nurse involvement in decision making.

#### 3.2. Audit of medical notes

Out of the 18 terminally ill HF patients, 10 were transferred to ICCU after initial hospitalization in intermediate cardiology care, 2 were transferred from secondary care centers and 6 were directly hospitalized in our ICCU after first medical contact at the Emergency Department. They all had a known history of chronic HF. Mean age was 73 years (62–80). Length of hospitalization before death was 8 days (1–18).

With regard to palliative medication, specific drugs were referred to for 33% of patients: for example, “start morphine if any evidence of distress”. The most frequently charted palliative medications were opiates (57% of patients were treated with i.v. morphine); 47% of patients were treated with sedatives on top of morphine (38% midazolam, 19% propofol, 29% dexmedetomidine).

62% patients were prescribed inotropes/vasopressors, 52% antibiotics, 43% double antiaggregant platelet therapy and anticoagulation up to the time of death; 18% of patients were supported by IABP (removed in 2 patients within 24 h from death), 17% renal replacement therapy (removed in 2 patients within 24 h from death), 86% patients remained intubated or received non-invasive ventilation at the time of death, having all electrocardiographic and pulse oximetry monitoring continued.

### Table 1

Responses to questionnaire about ceasing treatment during withdrawal of active treatment of a hypothetical terminally ill HF patient.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Medical (n = 7)</th>
<th>Nursing (n = 21)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>OACa and DAPTb</td>
<td>4 (57%)</td>
<td>17 (81%)</td>
<td>21 (75%)</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>6 (86%)</td>
<td>19 (90.4%)</td>
<td>25 (89%)</td>
</tr>
<tr>
<td>Cardiopulmonary resuscitation</td>
<td>7 (100%)</td>
<td>19 (90%)</td>
<td>26 (92%)</td>
</tr>
<tr>
<td>Inotropes/vasopressors</td>
<td>7 (100%)</td>
<td>19 (90%)</td>
<td>26 (92%)</td>
</tr>
<tr>
<td>IABPc</td>
<td>7 (100%)</td>
<td>19 (90%)</td>
<td>26 (92%)</td>
</tr>
<tr>
<td>ICDd</td>
<td>7 (100%)</td>
<td>19 (90%)</td>
<td>26 (92%)</td>
</tr>
<tr>
<td>Ventilation (invasive and non-invasive)</td>
<td>5 (71%)</td>
<td>16 (76%)</td>
<td>21 (75%)</td>
</tr>
<tr>
<td>RRTe</td>
<td>6 (86%)</td>
<td>18 (86%)</td>
<td>24 (85%)</td>
</tr>
</tbody>
</table>

* OAC: Oral anticoagulation.
* DAPT: Double antiaggregant platelet therapy.
* IABP: Intra-aortic balloon counterpulsation.
* ICD: Implantable cardioverter defibrillator.
* RRT: Renal replacement therapy.
None of the patients had withdrawal of internal cardioverter defibrillator. 24% of patients were resuscitated within 72 h from death. Although in the more advanced stages of HF, the number of symptoms exceeds those associated with advanced cancer [6], the records missed details about it.

Fig. 1 compares results from the questionnaire and note audit (active treatments within 72 h from death).

Anticipated directives were recorded only in 1 case and in 10 cases medical charts reported indications for withdrawing therapies. Statements regarding the rationale for withdrawal mostly referred to futility of continued treatment.

Moreover, even though, our population was represented by chronic HF patients no medical chart reported documentation of physician communication regarding life-sustaining interventions during previous hospitalizations and/or outpatient clinic check-up.

4. Discussion

Our survey showed that the care of terminally ill HF patients in our ICU was characterized by aggressive use of medical therapy and invasive technology, therefore we did not ensure an adequate palliative care.

First, our use of ICU was mostly inappropriate, with the exception of few cases of particularly complex management, where we tried to balance the benefits and burdens for the hospitalized person and their family members, after considering every other option available. Second, the management of treatments was often in conflict with recommendations by the Italian legislation [1]. Finally, we observed lack of documentation of physician communication regarding life-sustaining interventions during the index and previous hospitalizations and we found only 2 late referrals to palliative care.

The wide disparity between belief and practice that we observed could be in part a consequence of lack of professional training.

Other reasons behind these contrasts may relate to discomfort by doctors in broaching this topic, prognostic uncertainty, or patient and family unwillingness to discuss this sensitive issue.

Attitudes towards end-of-life care are very diverse among the countries of the European Community [7]: France and Germany have acknowledged advance directives and allows passive and indirect assistance to die before Italy. In general, the European tradition clearly keeps doctors liable for final decisions regarding end-of-life care. Physicians and caregivers are, however, often unaware of a patient’s last will and wishes regarding their end of life [8] and in these circumstances care may not be consistent with the patient’s feelings and wishes [4].

Moreover, our data confirmed that even though our national law is adequate to safeguard patient self-determination, our society is still unprepared, and patients and their families waver between irrational requests for impossible salvation and usually unmotivated fears of abuse or undignified overtreatment. To overcome fears and preconceptions and stimulate a mature, free and conscious reflection of citizens, it is crucial to train healthcare providers.

Encouraged by our observations, we have planned interventions aimed at training physicians and nurses so to prepare the professionals to be knowledgeable, confident and skilled to discuss this kind of questions. Post intervention data will be collected to include a repeat of the self-assessment survey and retrospective chart audits to determine changes of end-of-life care in our ICU.

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Declaration of Competing Interest

None declared.

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References