ABSTRACT

Objective: To evaluate the need for palliative care in patients with advanced Congestive Heart Failure (CHF) hospitalized in a cardiology ward. Method: Application of the World Health Organization Palliative Needs tool (NECPAL) with the assistant physician, patient and/or caregiver for evaluation of indication of Palliative Care (PC).

Results: 82 patients with a diagnosis of class III/IV Heart Failure or ejection fraction less than or equal to 40% in echocardiography of the last 12 months were included: Mean age 68 ± 20 years, 51 male patients and 31 female patients. Forty-three patients (52.4%) were married or in consensual union and ten (12%) lived alone. The death of 46 patients (56.1%) in the subsequent 12 months would not surprise their physician, and forty-five patients (55%) had palliative care indication according to the NECPAL.

Conclusion: About half of patients hospitalized for class III/IV Heart Failure would have an indication of Palliative Care for the relief of suffering caused by the disease.

DESCRIPTORS

Heart Failure; Palliative Care; Prognosis; Patient Care.
INTRODUCTION

While the number of deaths from heart disease has not changed substantially since 1990 in developed countries, there has been a 66% increase in deaths in low- or middle-income countries[10]. Because of disease characteristics, patients frequently require Palliative Care (PC) in order to relieve suffering and improve the quality of life[2-3].

Among chronic diseases, Congestive Heart Failure (CHF) has the highest rate of rehospitalization and mortality[4], which limits the life expectancy[5]. Patients with advanced CHF often suffer from various physical and psychosocial symptoms[6]. From the clinical point of view, CHF is more of a gradual decline of cardiac function with episodes of acute deterioration and discrete recovery[5,6] than an episode of sudden death[7]. It affects 2-5% of adults aged between 65-75 years and > 10% of those aged 80 years and over[5]. It is not uncommon that the patient receives aggressive treatment despite the poor prognosis[8].

The PC model involves taking a series of measures well before the final stages of illness in the near death period. Ideally, it should be implemented together with curative treatments in cases of poor prognosis in a comprehensive patient-centered approach, and by taking into account the existential, psychosocial and clinical needs[3].

The first step of offering PC to the population is the identification of individuals who would need of this type of care[2]. Traditionally, PC needs were estimated from causes of mortality[7], and more recently by using alternative methods of calculating prevalence or direct measures in the general population[8-9]. Among these measures, there are tools that estimate the probability of death in a given period (usually one year). An instrument capable of identifying patients who will require PC and predicts mortality would facilitate end-of-life planning, improve quality of life, and assist managers in allocating resources efficiently[10].

The Palliative Needs – NECPAL is a tool developed at the Collaborating Center of the World Health Organization of the Catalan Institute of Oncology to predict the mortality of chronic patients and thus, allow the planning of the care in the last year of life[10]. It has been applied in different clinical contexts[2,11].

In a cohort designed for evaluating the mortality prediction of this tool at 12 months of follow-up, the NECPAL presented high sensitivity (91.3% 95% CI: 87.2-94.2%) and high negative predictive value (91.0% 95% CI: 86.9-94.0).

The objective of the present study is to determine the number of adult patients with advanced Congestive Heart Failure with Palliative Care needs by using the NECPAL tool in a cardiology ward of a tertiary hospital and to quantify the perception and indication of Palliative Care by the physician.

METHOD

TYPE OF STUDY

Transversal.
**ETHICAL ASPECTS**

The Research Project was approved by the Research Ethics Committee of the Grupo Hospitalar Conceição under number 2.348.901 of 2017, thus meeting the ethical criteria in research with human beings according to Resolution 466/12 of the Ministry of Health, and use of the Informed Consent form.

**Chart 1 – Palliative Needs tool (NECPAL)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes or No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Surprise Question (SQ)*</td>
<td></td>
</tr>
<tr>
<td>Would you be surprised if this patient dies within the next 12 months?</td>
<td></td>
</tr>
</tbody>
</table>

2. Care need or demand requested

a) patient or primary caregiver requested exclusive palliative care or comfort measures or requested limitation of therapeutic effort?

b) indication by the patient's physician regarding palliative care need at this moment?

3. General clinical indicators of severity and progression

**nutritional markers:**

a) serum albumin < 2.5 mg/dl, unrelated to acute decompensation.

b) weight loss > 10% 

c) perception of severe, progressive, irreversible, nutritional decline and not related to concurrent process

**functional markers:**

a) severe serious functional dependence; Barthel < 25, ECOG > 2, Karnofsky < 50% 

b) loss of two or more activities of the daily living, even with adequate therapeutic intervention

**perception of severe and irreversible functional deterioration**

other markers of frailty and severity in the last six months (at least two):

a) decubitus ulcer III or IV 

b) infection with repetitive systemic repercussion (>1)

c) acute confusional syndrome 

d) persistent dysphagia

e) falls > 2

presence of emotional stress with progressive and irreversible symptoms.

**additional factors on use of health services:**

a) two or more admittances in emergency or elective services due to chronic illness 

b) need for full/intense care at home or institution

**Comorbidities > two pathologies**

4. Clinical indicators of severity and progressive pathology

**neoplasm (one single criterion):**

a) diagnosis of metastatic cancer, contraindication of specific treatment, affects vital organs such as lung, liver, central nervous system

b) significant functional impairment PPS < 50%

c) poorly controlled persistent symptoms despite optimal treatment

**chronic obstructive pulmonary disease (two or more criteria):**

a) dyspnea at rest or at minimal exertion between exacerbations 

b) physical and psychological symptoms of difficult handling

c) severe obstruction criteria FEv1 < 30% CVF < 40%

d) indication of home oxygen therapy by gasometry criteria

e) associated heart failure

f) hospitalizations > 3 in 12 months by COPD

**chronic heart disease (two or more criteria):**

a) Class III or IV CHF, valvar insufficiency and chronic coronary disease 

b) dyspnea or angina at rest 

c) physical and psychological symptoms of difficult treatment

d) in case of echography: ejection fraction <30% or severe pulmonary hypertension> 60 mmHg

e) renal failure: glomerular filtration rate < 30 L/min

f) hospital or emergency admission > three in the last year

**chronic neurological disease (arterial or venous, a single criterion):**

a) subacute phase < three months; vegetative state > three days

b) chronic phase > three months; recurrent pneumonia, pyelonephritis > 1, persistent fever > 1 week, grade III or IV pressure ulcer

**chronic neurological disease: amyotrophic lateral sclerosis and motor neuron diseases, Parkinson’s disease, multiple sclerosis (two or more criteria):**

a) physical deterioration 

b) complex and difficult to control symptoms

c) difficulty with communicating

d) progressive dysphagia

e) recurrent pneumonia

continues...
RESULTS

Table 1 shows the general characteristics of patients included in the sample. Table 2 shows palliative care indications for this population by different criteria. The death of 46 patients (56.1%) in the next 12 months would not be surprising to their physicians. Forty-five patients (55%) had indication of palliative care according to the NECPAL tool(2). Thirty patients or their family members (36%) requested the introduction of exclusive palliative care, measures of comfort or restriction of therapeutic effort. When questioned, physicians would indicate palliative care for 47 (57.3%) patients.

Table 3 shows the relationships between positivity for the NECPAL tool(2) and additional criteria in this population. The most frequently associated criteria with positivity of the NECPAL tool (2) were indicators of malnutrition, loss of functionality, frailty and presence of comorbidities.

DISCUSSION

The physician’s specialty, experience and the nature of the physician-patient relationship may influence the accuracy of survival prediction(16). An instrument that can identify patients who will require PC and predict mortality would facilitate end-of-life planning, improve patients’ quality of life, and assist managers in allocating resources efficiently(8). The Palliative Care model involves taking some measures well before the final stages of illness in the period close to death(3).

The surprise question is the first parameter of the NECPAL tool(2). In a study with 231 patients, the + SQ response predicted 83.8% of deaths(12). In our study, physicians would not be surprised if 46 (56.1%) of patients died in the 12 months following that hospitalization therefore, they would have indicated an institution of Palliative Care.

The number of patients that would have indication of PC if the NECPAL criteria were applied was slightly lower: 45 (55%). A Spanish cohort was designed to estimate the PC needs and mortality of 1,064 patients with chronic diseases by the SQ and NECPAL. All NECPAL + patients were considered as needing PC. At 12 months of follow-up, NECPAL presented high sensitivity (91.3% 95%CI:

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Table 1 – Characterization of sample of 82 patients with advanced CHF – Porto Alegre, Brazil, 2017.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>68 ± 20</td>
</tr>
<tr>
<td>Sex (M/F)</td>
<td>51/31</td>
</tr>
<tr>
<td>Married</td>
<td>43 (52.4%)</td>
</tr>
<tr>
<td>Living alone</td>
<td>10 (12%)</td>
</tr>
<tr>
<td>Schooling*</td>
<td>5 years</td>
</tr>
<tr>
<td>PPS*</td>
<td>80</td>
</tr>
<tr>
<td>Barthel*</td>
<td>95</td>
</tr>
</tbody>
</table>

*Median.

Table 2 – Indication of Palliative Care (PC) in a population of patients with advanced CHF – Porto Alegre, Brazil, 2017.

<table>
<thead>
<tr>
<th>Questions</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surprise question +</td>
<td>46 (56.1%)</td>
</tr>
<tr>
<td>NECPAL +</td>
<td>45 (55%)</td>
</tr>
<tr>
<td>PC request by family member</td>
<td>30 (36.6%)</td>
</tr>
<tr>
<td>PC indication by physician</td>
<td>47 (57.3)</td>
</tr>
<tr>
<td>Total</td>
<td>82 (100%)</td>
</tr>
</tbody>
</table>

Table 3 – Relationship between additional criteria and positivity of the NECPAL tool(2) – Porto Alegre, Brazil, 2017.

<table>
<thead>
<tr>
<th>NECPAL tool</th>
<th>N (%)</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>nutritional</td>
<td>20 (25)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>functionality</td>
<td>15(18.3)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>frailty</td>
<td>15(18)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>stress</td>
<td>19(23)</td>
<td>0.008</td>
</tr>
<tr>
<td>comorbidities</td>
<td>54(65.9)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>neoplasm</td>
<td>3 (3.7)</td>
<td>0.313</td>
</tr>
<tr>
<td>neurovascular</td>
<td>2(2.4)</td>
<td>0.563</td>
</tr>
<tr>
<td>neuro-chronic</td>
<td>1 (1.2)</td>
<td>1.00</td>
</tr>
<tr>
<td>hepatic</td>
<td>1 (1.2)</td>
<td>1.00</td>
</tr>
<tr>
<td>dementia</td>
<td>1 (1.2)</td>
<td>1.00</td>
</tr>
<tr>
<td>COPD</td>
<td>19(23.2)</td>
<td>0.008</td>
</tr>
</tbody>
</table>

*chi-square test

* Consider as positive NECPAL the patients for whom the SQ response is "no", and at least another question with a "yes" answer to items 3, 4, 5.
Resultados:
Foi incluído 82 pacientes. A média de idade de 68 ± 20. Cinquenta e um pacientes do sexo masculino e 31 do sexo feminino. Quarenta e três pacientes (52,4%) eram casados ou estavam em união consensual, e 10 (12%) moravam sozinhos. O óbito de 46 pacientes (56,1%) nos 12 meses subsequentes não surpreendia o seu médico, e 45 pacientes (55%) tiveram indicação de cuidados paliativos. Conclusão: Cerca da metade dos pacientes que foram internados por Insuficiência Cardiaca classe III-IV teria indicação de Cuidados Paliativos para o alívio do sofrimento provocado pela doença.

CONCLUSÃO

The data from our study indicated that about half of patients hospitalized for class III/IV CHF in a tertiary hospital would have an indication of Palliative Care for the relief of suffering caused by the disease and improvement of the quality of life. New studies are needed for long term follow-up in order to evaluate the NECPAL tool in different health contexts of the Brazilian population.

REFERENCES


