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Does the Type and Dose of Palliative Care Services Impact Symptom Control in Patients with Advanced Heart Failure?

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Introduction: Outpatient palliative care (PC) for patients with symptomatic heart failure (HF) is a relatively new practice and few data exist that describe the nature of these clinical encounters. **Hypothesis:** We hypothesized that the nature of outpatient PC services (i.e. type, duration, frequency) used by patients with advanced HF would impact symptom burden 3 months post-discharge. **Methods:** This study was conducted at a single, tertiary care medical center. Patients were recruited from the inpatient setting during an episode of acute HF exacerbation and referred for an initial PC consultation and subsequent follow-up support with the PC team. Data on PC services accessed were monitored over 3 months. Surveys were conducted immediately after and 3 months post-discharge to assess symptom burden. **Results:** Thirty six patients completed the initial PC consultation with a PC specialist (17%) or advanced practice nurse (83%); care focused on physical and psychosocial assessment (100%), advanced care planning (100%), symptom management (81%), illness understanding (69%), and patient and family coping (50%). Median total time for the initial PC consultation was 75 minutes (range 50-120). Twenty-nine (83.7%) agreed to receive additional PC support (Figure 1); median number of visits per patient was 2 (range 1-4). Marked improvements in all symptoms, except depression, were noted at 3 months (Table 1). Participants who sought PC services beyond the initial consultation reported significantly better symptom control than their counterparts ($P < .050$). **Conclusion:** Our findings suggest that the type and dose of PC significantly improved the symptoms evaluated. Randomized controlled trials are indicated to further evaluate the effectiveness of PC services in patients with advanced HF.

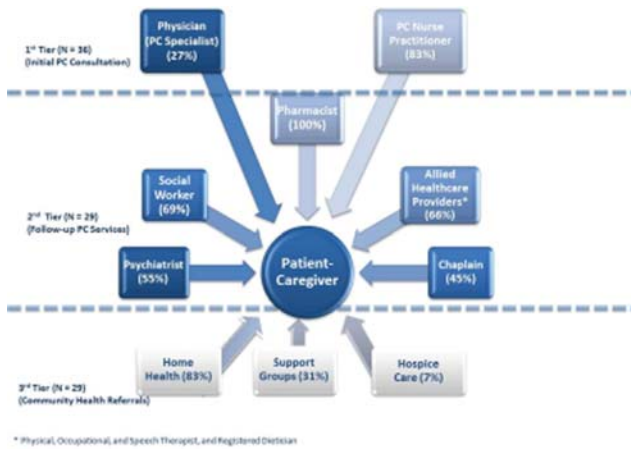


Figure 1. Palliative Care Services that Participants Used.

Table 1. Comparison between Baseline and Follow-up Symptom Scores (N = 36)

ESAS Symptoms	Total No. of Patients	SRR* n (%)	Baseline Median (P25-P75)	Follow-Up Median (P25-P75)	Z statistic	p**
TSDS	36	NA	34.00 (29.00 - 40.75)	26.50 (23.25 - 32.75)	-6.895	<.001
Fatigue	36	9 (25.0)	4.50 (3.25 - 7.00)	4.00 (3.00 - 6.00)	-2.846	.004
Pain	36	11 (30.6)	6.00 (0.00 - 7.00)	4.00 (0.00 - 6.00)	-3.690	<.001
Anxiety	36	13 (36.1)	4.00 (3.00 - 6.00)	3.50 (1.25 - 4.00)	-3.523	<.001
Well-Being	36	8 (22.2)	4.00 (0.00-6.00)	3.00 (0.00 - 4.00)	-4.148	<.001
Depression	36	9 (25.0)	4.00 (3.00 - 6.00)	3.00 (0.00 - 5.00)	-1.640	.038
Dyspnea	36	3 (22.2)	4.00 (3.00-5.00)	3.00 (0.25 - 4.00)	-3.814	<.001
Drowsiness	36	3 (8.3)	4.00 (0.00 - 4.00)	3.00 (0.00 - 4.00)	-3.231	.001
Appetite	36	3 (8.3)	3.00 (0.00-4.75)	3.00 (0.00 - 4.00)	-2.919	.004
Nausea	36	4 (11.1)	3.00 (0.00 - 4.00)	3.00 (0.00 - 3.00)	-3.350	.001

Abbreviations: ESAS, Edmonton Symptom Assessment Scale; P25-P75, interquartile range; TSDS, total symptom distress score; NA, not assessed.

*SRR, symptom response rate - defined n a 2-point decrease or more in 0-10 score on ESAS.

**Wilcoxon signed-rank test.

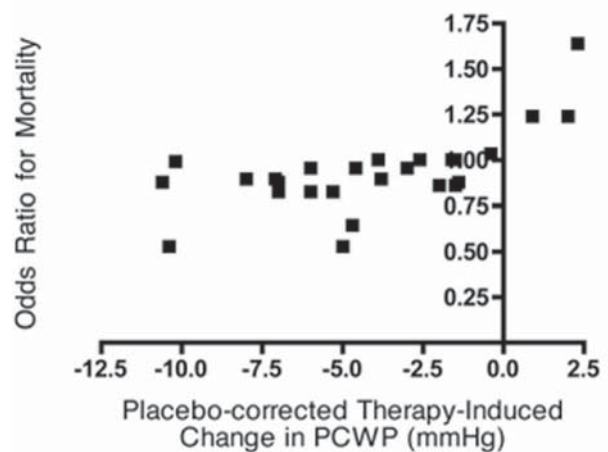
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Short-Term Drug Effects on Hemodynamics as Predictors of Long-Term Therapeutic Effects on Mortality in Patients with Heart Failure and Left Ventricular Dysfunction

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Introduction: The purpose of this study was to quantitatively assess the relationship between short-term therapy-induced changes in hemodynamics and long-term therapeutic effects on mortality in pts with heart failure (HF) and left ventricular dysfunction (LVD). **Hypothesis:** Therapy-induced short-term changes in hemodynamics are correlated with the long-term effect of those therapies on mortality in pts with HF and LVD. **Methods:** A search was conducted to identify interventions which have had effect on mortality evaluated in at least one randomized controlled trial (RCT) which enrolled at least 500 patients with HF and an EF < 45% (mortality trials). A subsequent search identified RCTs which assessed these therapies' short-term effects on hemodynamics in similar populations (hemodynamic trials). For each intervention, an odds ratio (OR) for mortality was calculated. A mean placebo-corrected therapy-induced change in each hemodynamic variable was then calculated for each intervention from the hemodynamic trials. We assessed the correlation of the OR for mortality with the placebo-corrected therapy-induced change in each hemodynamic variable. **Results:** Included were 15 mortality trials of 14 different therapies (n=38,632) and 28 hemodynamic trials of the same therapies (n= 2,036, range of treatment duration = 1 hour - 6 months). A significant correlation was identified between the OR for mortality and the placebo-corrected therapy-induced changes in pulmonary capillary wedge pressure (PCWP) (r = 0.60, 95% CI

Odds Ratio for Mortality vs. Change in PCWP



0.2-0.8, p = 0.002) (see Graph) and heart rate (HR) (r = 0.50, 95% CI 0.09-0.8, p=0.02). No significant correlation was identified for right atrial pressure (RAP), mean pulmonary artery pressure, cardiac index or systemic vascular resistance. When the hemodynamic trials were stratified according to the duration of therapy (group 1 < 24hrs and group 2 > 24hrs) prior to assessment of change in hemodynamics, therapy-induced changes in group 1 RAP correlated with odds ratio for mortality (r=0.80, p=0.004, 95% CI 0.3-0.9). **Conclusion:** Short term therapy-induced changes in PCWP and HR are significantly correlated with long-term trial level effects on mortality in patients with HF and LVD.

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Patients with and without Left Ventricular Dysfunction Suffering from Acute Ischemic Stroke Benefit Similarly from Thrombolytic Therapy

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Introduction: Heart failure is an important risk factor for thromboembolic events and it is associated with a greater incidence of ischemic stroke and worse outcomes. However, little is known regarding results of thrombolytic therapy in patients with left ventricle systolic dysfunction suffering from ischemic stroke. In this scenario, where cerebral perfusion may be impaired by lower cardiac output, thrombolysis may not be as effective as expected. **Objective:** To investigate rates of successful response of thrombolytic therapy and mid-term neurologic outcomes among patients with acute ischemic stroke and moderate to severe left ventricular dysfunction. **Methods:** Consecutive patients with ischemic stroke that underwent systemic thrombolysis with alteplase in the Emergency Unit of Hospital de Clínicas de Porto Alegre, in Brazil, were prospectively followed. Clinical evaluations were performed by trained neurologists at admission, discharge and 3 months post event. Ejection fraction (EF) evaluated by bi-dimensional Doppler echocardiography was part of patients' assessment; left ventricular systolic dysfunction was defined as EF ≤35%. Adequate acute response to thrombolysis was defined as National Institute of Health Ischemic Stroke Scale (NIHSS) ≤ 1 point at discharge, while neurologic outcome at 3 months was assessed according to the modified Rankin scale (mRS) as: minimal or no neurologic deficit mRS ≤ 1 and functional independence as mRS ≤ 2. **Results:** Among 268 included patients (age= 65 ± 13 years; 55% male; NIHSS at admission= 11 ± 7; symptoms-to-thrombolysis time= 182 ± 62min), the prevalence of systolic dysfunction was 13.5%. The severity of neurologic deficits at presentation was similar between patients with systolic dysfunction and normal EF (14.4 vs 11.2 points;p=0.01), but systolic blood pressure was higher among the later (147 vs 161 mmHg;p=0.02). Successful thrombolytic therapy rates were similar between groups (30.5% vs 43.5%, respectively for systolic dysfunction and normal EF;p=0.3). Rate of minimal neurologic deficit was higher among patients with systolic dysfunction (30.5% vs 51%;p=0.03); however, rates of functional independence were similar between groups (63% vs 63.6%, respectively;p=0.9). There was no difference in the incidence of symptomatic cerebral hemorrhage or death in 3 months. In multivariate analyses adjusted for age, NIHSS at admission, systolic blood pressure and atrial fibrillation, the presence of systolic dysfunction was not independently associated with mRS > 1 (OR for EF≤35%=2.1 (CI 0.8-5.4;p=0.1). **Conclusions:** Among patients with ischemic stroke treated with thrombolytic therapy, individuals with systolic dysfunction presented similar rates of functional independence at 3 months as compared to those with normal EF. Systolic dysfunction was not an independent