Abstract: The impact of early intervention and rehabilitation on functional decline in patients hospitalised for acute heart failure.

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Topic(s): Acute Heart Failure - Other

Funding Acknowledgements: This work was unfunded

Background: The occurrence of functional decline in elderly adults hospitalised for acute illness is well established with decline occurring as early as day 2 of admission. Acute heart failure (AHF) is the most common cause of admissions for patients aged 65 and over in the UK. Patients admitted to the Heart Failure Unit (HFU) at St George’s Hospital are high risk for functional decline throughout their stay having an above average length of stay, mean age of 71 years, and 80‰ having at least one other chronic disease.

Purpose: Traditionally these patients would not be seen by a physiotherapist until after their intravenous diuretic treatment. The aim was to assess the impact of early and specialist physiotherapy intervention on functional decline during hospitalisation of patients with AHF.

Methodology: The Elderly Mobility Scale (EMS) was used to assess function on admission and discharge for 153 patients between March 2016 and October 2017. Patients were provided with individualised physiotherapy intervention aimed at preventing functional decline, planning for discharge, and promoting rehabilitation and self-management. Data sets were analysed for normality with the Shapiro-Wilk test and compared using the Wilcoxon signed ranks test. Data on admission date to first assessment and discharge were collected.

Results: Median length of stay was 10.0 (range 1-72) days. Patients waited for physiotherapy less than 24 hours (range 0-7 days). Patient EMS scores increased significantly (p < 0.001) from admission (Mdn 14.00 IQR 11.00-18.00) to discharge (Mdn 16.00 IQR 13.00-18.00). For dependent patients on admission (EMS 0-9, n=30) the median EMS score changed from 5.0 to 12.5. For borderline category patients (EMS 10-13, n=42) median EMS changed from 12.5 to 13.0. Patients in the independent category on admission (EMS 14-20, n=81) had no change in their median admission EMS score of 18.0. On admission 20‰ of patients were in the dependent category. This reduced to 6.5‰ on discharge. Patients categorised as independent increased from 53‰ to 71‰.

Discussion: Early physiotherapy intervention for patients hospitalised with AHF appears to significantly improve their function from admission to discharge. The EMS has been shown to be responsive to change and the minimally clinical significant difference estimated at 2 points which has been the change in this sample group. In particular those patients more dependent on admission had the most benefit from early physiotherapy intervention. Implications for patients are improved quality of life, particularly those at high risk of functional decline. Social benefits are a reduced reliance on care services in the community. It appears that the employment of a specialist physiotherapist dedicated to this patient group is beneficial to patients. This work assists with work force planning for new or evolving acute heart failure services. A matched comparative sample would be useful.