Early Ambulation With Heart Failure Patients to Help Reduce Length of Stay

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Introduction

Between 2009-2012, an estimated 5.7 million American adults (20 years of age and older) were living with HF1. In 2012, the American Heart Association (AHA) estimated $30.7 billion attributed to HF. The AHA projects this cost to increase to $67.9 billion by 2030.2 Functional decline and deconditioning can occur as early as 48 hours from admission.3 Early ambulation and continued ambulation, at least 3 times per day, can significantly reduce length of stay (LOS) in older adults.3,4 In an acute care facility study, patients who increased their walking by 600 steps within 48 hours of admission saw a decrease in LOS by 2 days.5 Number of days before ambulation in LVAD patients was a significant predictor in LOS.6

A consultant was placed to inpatient cardiac rehab for patients admitted to heart failure service in the Ross Heart Hospital. Initial steps to consult patient included chart review in IHS (EPIC software), nursing/physician approval, and patient education. Appropriate patients were then seen by an Exercise Physiologist (EP) to promote and assist with ambulation within the first 48 hours of admission. Patient’s functional status was assessed prior to ambulation and hemodynamics were monitored throughout exercise session. Patients were educated on the importance of ambulation and activity progression while in the hospital setting. Consults were tracked using Microsoft Excel; date of admission, date of consult placed, date the consult completed, time frame for first walk, and length of stay. In Microsoft Excel, groups 1 and 3 were randomized using excel to match the sample size in group 2. Then, averages for LOS were calculated for each of the three groups. IBM SPSS statistical software was used to run an one-way ANOVA test to assess if significance existed. A post-hoc analysis was then performed to determine if there was a significance between each group independently. Vital data, which was the projected LOS for our patient population, was also used to run an one-way ANOVA and post-hoc test. Vital data is used as a benchmark for Academic Medical Centers for data comparison.

Methods

This pilot project demonstrated that early ambulation could be a tool used by hospitals to decrease their LOS. Based on the achieved results, early ambulation had a positive impact on LOS and was within hospital LOS goals. Currently, there are no guidelines for early ambulation in the hospital setting for heart failure patients. There- fore, this pilot improvement project was established to evaluate the effect early ambulation could have on LOS.

Results

Figure 1 shows that between groups 1 & 2 there was ↓ by 4.04 days in stay, and between groups 1 & 3 there was ↓ by 4.10 days. Figure 2 indicates that only group 1 was lower than OSUMC’s index of 0.95.

Figure 1: Length of Stay and Ambulation

Figure 2: Length of Stay Index and Ambulation

Discussion

Currently, there are no guidelines for early ambulation in the hospital setting for heart failure patients. Therefore, this pilot improvement project was established to evaluate the effect early ambulation could have on LOS. Based on the achieved results, early ambulation had a positive impact on LOS and was within hospital LOS goals. This pilot project demonstrated that early ambulation could be a tool used by hospitals to decrease their LOS which in return could help with the costly burden of heart failure admissions and LOS.

Future Direction

From this pilot project, a number of implications occurred. Implica- tions that could be improved on in future projects that were present in this project include: early referral placement and to have a design- ated EP on CHF service. Some other limitations for this project in- cluded patient’s clinical and physical status in advanced admission, nursing and physician discretion at time of admission, medical testing and procedures. Further research is recommended to further support the conclusions of this pilot project.

Conclusion

To evaluate the impact of early ambulation on LOS for patients admitted to the heart failure (HF) service at The Ohio State University Wexner Medical Center’s (OSUWMC) Ross Heart Hospital. The three groups that were compared to LOS were 1) early ambulation within 48 hours of admission, 2) ambulation after 48 hours of admission, and 3) no ambulation with inpatient cardiac rehab.

Patients who ambulated within 48 hours of admission showed a significant decrease in average LOS between the late ambulation group and the no ambulation group. There was no statistical significance between the late and no ambulation groups. The early ambulation group’s index was below the target mark for the hospital’s goal pf 0.95.

Obstacles included patient’s clinical and physical status in early admission, nursing/physician approval, and patient refusal. Some other limitations for this project include: early referral placement and to have a designated EP on CHF service. Further research is recommended to further support the conclusions of this pilot project.

References