

Impact of a Multidisciplinary Heart Failure Clinic on Patient Outcomes

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Background

- Heart failure (HF) is a chronic disease state that an estimated one in five people will develop in their lifetime¹
- Although there has been slight improvement in 30-day all-cause readmission rates during the past four years in patients with heart failure, few hospitals have seen large success¹
- Some studies have shown that integration of a pharmacist into the ambulatory team improved outcomes such as hospital visits in heart failure patients²

Objectives

- To determine if the enrollment into a multidisciplinary heart failure clinic run by an advanced practice registered nurse and a pharmacist improves 30-day readmission rates

Methods

- Retrospective, single center cohort study
- Data was collected via retrospective chart review of the Kentuckiana Heart Failure Clinic (KY HFC) in November 2020 and the Louisville Cardiology Group (LCG) in November 2019
- Inclusion Criteria**
 - HF diagnosis between 9/1/2019 – 10/31/2019 and a subsequent office visit with Louisville Cardiology Group with an ICD-10 code of 150.9 OR
 - KY HFC visit in November 2020
- Exclusion Criteria**
 - New York Heart Association (NYHA) Class IV
 - No follow up visit with Louisville Cardiology Group, or no ICD-10 code of 150.9
 - <18 years old
- Categorical data were analyzed using the Fisher's exact test
- Nominal data were analyzed using a two tailed t-test

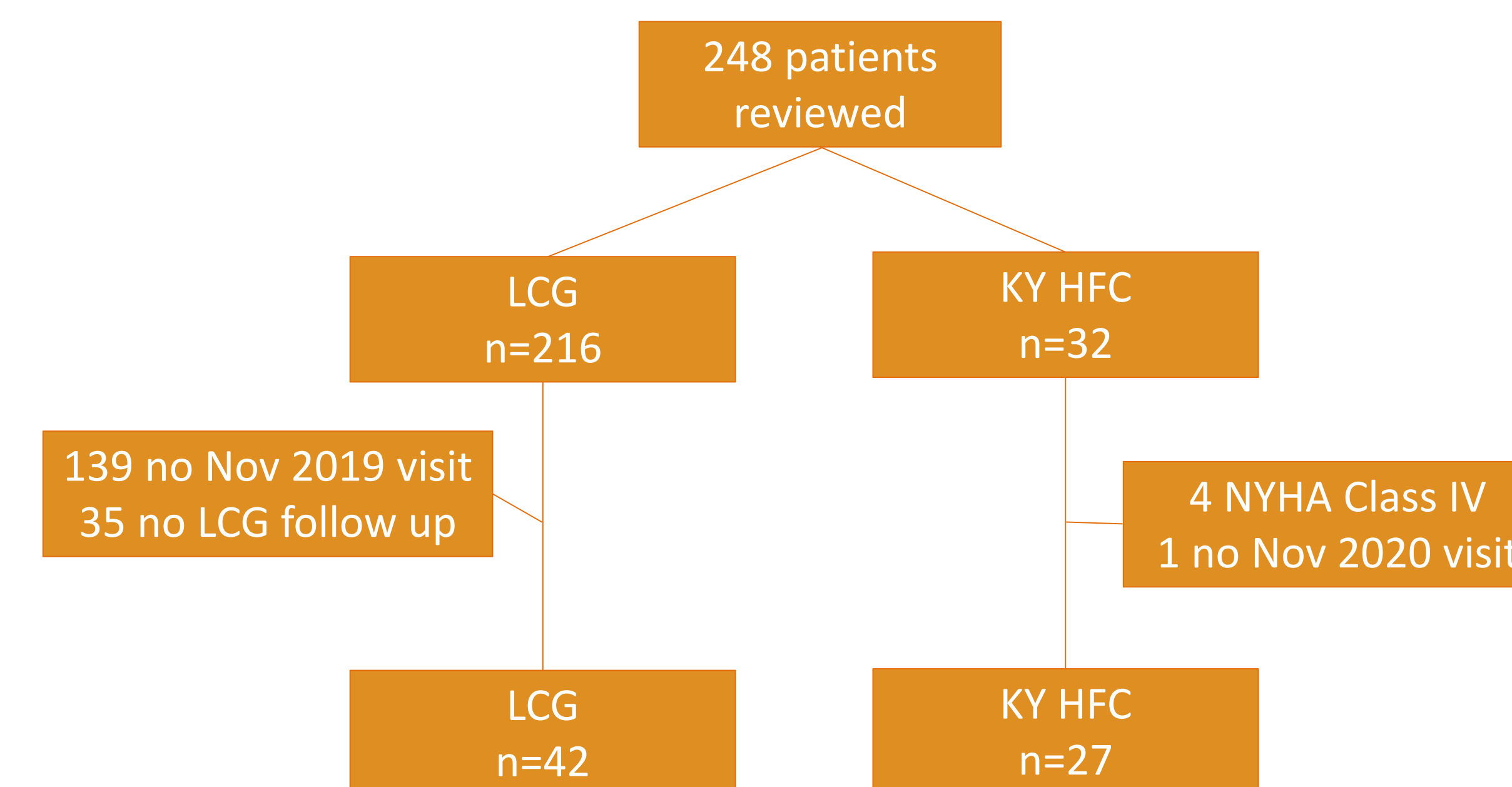
Outcomes

- Primary Outcome
 - 30-day readmission
- Secondary Outcome
 - 30-day emergency department visit
 - Length of stay
 - 90-day readmission

Disclosures

Authors of this presentation have the following to disclose concerning possible financial or person relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation - DeAnna Stinnett, PharmD; Taylor Mughmaw, PharmD, BCACP; Katherine Conway, PharmD, BCPS; Allie Williams, APRN FNP-C; Chelsea Owen, PharmD, MPH, BCPS

Patient Population



Baseline Characteristics

| Characteristic | LCG n=42 | KY HFC n=27 | P value |
|--|-------------|----------------|--------------|
| Age, years (mean, st dev) | 72 (13.7) | 72 (10.8) | 0.840 |
| NYHA Classification | | | 0.041 |
| I | 14 (33%) | 5 (19%) | |
| II | 23 (55%) | 12 (44%) | |
| III | 5 (12%) | 10 (37%) | |
| Sex | | | 0.025 |
| Male | 38 (90%) | 18 (67%) | |
| Female | 4 (10%) | 9 (33%) | |
| Race | | | 0.292 |
| White | 41 (98%) | 24 (89%) | |
| African American or other | 1 (2%) | 3 (11%) | |
| Smoking Status | | | 0.419 |
| Never | 20 (48%) | 15 (56%) | |
| Former or Current | 22 (52%) | 11 (41%) | |
| Comorbidity | | | |
| Diabetes Mellitus (DM) | 9 (21%) | 16 (59%) | 0.002 |
| Coronary Artery Disease (CAD) | 18 (43%) | 19 (70%) | 0.029 |
| Peripheral Artery Disease (PAD) | 1 (2%) | 1 (3%) | 1 |
| Clinical ASCVD | 18 (43%) | 16 (59%) | 0.222 |
| Chronic Obstructive Pulmonary Disease (COPD) | 8 (19%) | 5 (18%) | 1 |
| Acute Kidney Injury (AKI) | 2 (5%) | 1 (3%) | 1 |
| Chronic Kidney Disease (CKD) | 12 (29%) | 12 (44%) | 0.203 |
| Atrial Fibrillation (AF) | 22 (52%) | 16 (59%) | 0.627 |
| Atrial Flutter (Aflutter) | 3 (7%) | 2 (7%) | 0.657 |
| Valvular Heart Disease | 10 (24%) | 9 (33%) | 0.419 |
| Cardiomyopathy | 16 (38%) | 10 (37%) | 1 |

Results

| Endpoint | Lou Cardiology n=42 | KY HFC n=27 | P value |
|-------------------------------|------------------------|----------------|---------|
| 30-day readmission | 5 (12%) | 4 (15%) | 0.729 |
| Length of Stay, days (median) | 5 | 5 | n/a |
| 30-Day ED Visit | 5 (12%) | 5 (19%) | 0.497 |
| 90-day readmission | 5 (12%) | 4 (15%) | 0.729 |

Discussion

This data is inconsistent with previous literature which demonstrated reduced heart failure readmission rates among those with pharmacist involvement. This study also differs from others by comparing two populations followed by outpatient clinics with no "control group". The lack of significant difference could be attributed to a smaller sample size in both groups. Comorbidities between the two groups were statistically significantly different in regards to diabetes mellitus, coronary artery disease, and NYHA classification. This could point to the severity of patients referred to the Kentuckiana Heart Failure Clinic.

Limitations

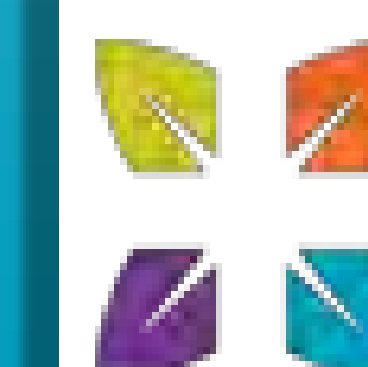
- The KY HFC opened end of July 2020, with a small patient population to analyze in November 2020.
- Single center retrospective study
- Admissions and ED visits outside of Baptist Health Louisville unknown
- Insurance was not assessed in this study and could have an effect on the number of patients that were lost to follow up, or failed to have a timely outpatient follow up

Future Directions

- Remote monitoring in the Kentuckiana Heart Failure Clinic
- Adherence to lifestyle modifications after PharmD counseling

References

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