**Scope of Work**

Title: A comprehensive population-based characterization of heart failure with preserved ejection fraction

Projected Start Date: TBD

Projected End Date: TBD

**Background**

Chronic heart failure (HF) is a life-threatening and debilitating clinical syndrome that results from structural or functional impairment of ventricular filling or ejection of blood. Half of patients with heart failure (HF) have a preserved left ventricular ejection fraction (HFpEF), yet no effective treatment has been identified. However, no single dataset has provided comprehensive population-based data on HFpEF, encompassing inpatients and outpatients and detailed clinical characteristics. The purpose of this present proposal is to describe the clinical characteristics of HFpEF patients with particular focus on hospitalization history, NYHA class, comorbid conditions, medication use and biochemistry.

**Project Overview**

In the Genesis Care database, characteristics of HFpEF patients will be assessed and described.

Specific objectives include:

1. Describe clinical characteristics of identified HFpEF patients, overall and stratified by
2. Presence of volume overload (peripheral and/or pulmonary edema)
3. Hospitalization history
4. Determine proportions of the following subsets of HFpEF patients
5. Among those with NYHA class II-IV, proportions with evidence of fluid overload
6. Among those with NYHA class II-IV and evidence of volume overload, proportions hospitalized for heart failure within the past 12 months.
7. Among those with NYHA class III-IV with evidence of volume overload and not hospitalized for heart failure within the past 12 months, proportions with NT-proBNP threshold above 250 pg/mL
8. Among those with NYHA class III-IV with evidence of volume overload, not hospitalized for heart failure within the past 12 months, and with NT-proBNP threshold above 250 pg/mL, proportions with sleep apnea, orthopnea, diabetes, coronary artery disease or atrial fibrillation.

Table 1. Baseline clinical characteristics of HFpEF patients

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Characteristics | All HFpEF | Volume overload  (Peripheral and/or pulmonary or edema) | | Hospitalized within the past 12 months | |
| Yes | No | Yes | No |
| Age, years, mean (±SD) |  |  |  |  |  |
| Female sex |  |  |  |  |  |
| Index year |  |  |  |  |  |
| 2000-2006 |  |  |  |  |  |
| 2007 – 2012 |  |  |  |  |  |
| **Duration since HF diagnosis** |  |  |  |  |  |
| <= 6 months |  |  |  |  |  |
| >6 months |  |  |  |  |  |
| Smoking, current or previous |  |  |  |  |  |
| Alcohol |  |  |  |  |  |
| Never |  |  |  |  |  |
| Normal |  |  |  |  |  |
| Current/previous problematic |  |  |  |  |  |
| Type of care |  |  |  |  |  |
| **Inpatient** |  |  |  |  |  |
| Outpatient physician |  |  |  |  |  |
| **Outpatient HF nurse clinic** |  |  |  |  |  |
| Clinical characteristics |  |  |  |  |  |
| Body mass index , kg/m2 | Assessment |  |  |  |  |
| Systolic blood pressure, mmHg | Examination - Lying |  |  |  |  |
| Diastolic blood pressure , mmHg | Examination - Lying |  |  |  |  |
| Pulse pressure , mmHg | Systolic - Diastolic |  |  |  |  |
| **Mean arterial pressure , mmHg** | Systolic+diastolic/2 |  |  |  |  |
| Heart rate, b.p.m. |  |  |  |  |  |
| NYHA class | Dyspnoea |  |  |  |  |
| I |  |  |  |  |  |
| II |  |  |  |  |  |
| III |  |  |  |  |  |
| IV |  |  |  |  |  |
| Chest Xray **Have Only Yes/No**  **C**hest X-ray | Investigations |  |  |  |  |
| Cardiomegaly |  |  |  |  |  |
| Pulmonary congestion |  |  |  |  |  |
| Comorbidities |  |  |  |  |  |
| Sleep apnea | Obstructive sleep apnea(non-cradiac) |  |  |  |  |
| **Orthopnea** | Assessment (History) |  |  |  |  |
| Hypertension |  |  |  |  |  |
| Diabetes |  |  |  |  |  |
| Atrial fibrillation | Type(cardio vascular) |  |  |  |  |
| Lung disease (**is AY disease)** | Airway disease |  |  |  |  |
| Valve disease | Prostheticc material |  |  |  |  |
| **Peripheral artery disease** | PVD(Medical Hist->Cardiovascular) |  |  |  |  |
| Anaemia | Non-cardiac |  |  |  |  |
| Aortic stenosis | Structural H.D |  |  |  |  |
| Biochemistry |  |  |  |  |  |
| Creatinine , mmol/L | Investigations |  |  |  |  |
| eGFR, mL/min/1.73 m2 | Investigations |  |  |  |  |
| Haemoglobin , g/dL | Investigations |  |  |  |  |
| Potassium , mEq/L | Investigations |  |  |  |  |
| NT-proBNP , pg/mL, median [IQR] | Investigations |  |  |  |  |
| BNP , pg/mL, median [IQR] | Investigations |  |  |  |  |
| Total cholesterol | Investigations |  |  |  |  |
| LDL cholesterol | Investigations |  |  |  |  |
| Medications |  |  |  |  |  |
| ACEI, ARBs or Renin inhibitors | Pharma |  |  |  |  |
| Sacubitril/valsartan | ARNI(pharma) |  |  |  |  |
| Beta-blockers |  |  |  |  |  |
| Diuretics |  |  |  |  |  |
| Aldosterone antagonists | MRA |  |  |  |  |
| Digoxin | Pharma |  |  |  |  |
| Calcium channel blockers | Not there |  |  |  |  |
| Statins | Pharma |  |  |  |  |
| Nitrates | Pharma |  |  |  |  |

**Notes Taken:**

Consider all patients with Lvef >= 50, If lvef is null then consider Lowestlvef > 50.

**For Volume Overload:**

Acute pulmonary odeama (Patient Data) or Leg odema(Assessmentt)

or JVP >3

or Oedma is not NILL

or Chest != CLEAR

or DIrutics = Yes (Pharma)

or Loop = Yes (Pharma)

or Volume status = hypervolemic(Patient summary)