Predictors of Congestive Readmission Within 6 Months Following Acute Decompensated Heart Failure

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Introduction: Acute decompensated heart failure (ADHF) is frequently followed by rehospitalisation, with or without the repeat development of congestion. Prediction of the specific mode of readmission may inform rehospitalisation prevention programs. Hence, we sought to determine predictors of “congestive readmission” within 6 months of discharge, considering clinical factors, including comorbid acute kidney injury (AKI).

Methods: Consecutive patients with ADHF admitted to a single tertiary centre (July 2015–July 2017) were included, with diagnosis adjudicated by the Boston Criteria. AKI was defined by KDIGO-criteria, at the time of admission (AKIADM) and the subsequent inpatient stay (AKIIP).

Results: Of 361 patients (median age 82 years, 55% male, 56% HFrEF), 206 experienced readmission episodes within 183 days; 40% of these were congestive readmissions. Univariate predictors of congestive readmission included admission creatinine (p < 0.005), type 2 diabetes (p < 0.02), severe LV systolic dysfunction (p < 0.03) and ischaemic heart disease (p < 0.05). A multivariate regression model demonstrated that congestive readmissions were significantly associated with AKIADM (p < 0.03; OR 2.20), but not with AKIIP.

Conclusion: Baseline characteristics of those experiencing congestive versus non-congestive modes of 6-month readmission appear to differ, with greater degrees of LV systolic dysfunction and a greater burden of diabetes and ischaemic heart disease. However, the association of AKIADM with subsequent congestive readmission is novel and the implications for risk prediction and prevention should be further explored.

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Prevalence and Management of Cardiomyopathy in Adult Patients with Muscular Dystrophies

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Background: Cardiomyopathy is common in the setting of muscular dystrophy (MD). As life expectancy has improved with treatment of neuromuscular-associated respiratory failure, patients surviving into adulthood are at risk of developing cardiomyopathy. However, MD-associated cardiomyopathy is often underdiagnosed and undertreated.

Methods and results: We conducted a retrospective review of patients seen at the St Vincent’s Neuromuscular Cardiology and Heart Failure Clinics between February 2018–February 2019. Twenty-six patients were identified, with diagnoses of Duchenne MD (n = 18), Becker MD (n = 3), limb girdle MD (n = 2), congenital MD (n = 2) and Emery Dreifuss MD (n = 1).

Most patients were male (n = 24, 84.6%) and non-ambulant, with mean age 24.7 ± 7.1 years. Trans-thoracic echocardiogram had been performed in almost all patients (n = 24, 93.2%) in the past 12 months. A left ventricular ejection fraction (LVEF) ≤ 53% was identified in a third of patients (n = 8, 34.8%). More severe LV dysfunction with LVEF ≤ 40% was identified in 2 patients (7.7%). The majority of patients were prescribed an ACE inhibitor (n = 22, 84.6%), while nearly half of the cohort were prescribed a beta blocker (n = 12, 46.1%). Analysis of global longitudinal strain was performed in only a small proportion of patients (n = 5, 4.2%) due to limited image quality in this patient cohort.
Conclusion: Muscular dystrophy is associated with significant cardiomyopathy, which may shorten life expectancy. This unique population can benefit from careful cardiac surveillance with echocardiography to detect cardiomyopathy and allow early pharmacological treatment.

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Prevalence and Prognostic Significance of Chronic Kidney Disease in Patients with Heart Failure and Preserved Ejection Fraction in Australia

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Introduction: Heart failure (HF) with preserved ejection fraction (HFPEF) is characterised by challenging fluid management with the potential to adversely affect renal function.

Methods: We assessed the prevalence and prognostic significance of stage 3–5 chronic kidney disease (CKD) in patients with HFPEF managed within the Genesiscare Heart Failure Management Clinic (GC-HFMC) network in Australia. Baseline characteristics, all-cause mortality and HF hospitalisation at 1 year and intermediate term follow-up were compared between those with and without stage 3–5 CKD.

Results: 297 consecutive patients were included with a mean age of 79 ± 10 years. Of these, 62% were female, and there was a history of hypertension in 83% and diabetes in 34%. Prevalence of CKD stage 3–5 was 45%. Baseline diuretic utilisation was 81%, with 26% of patients being on ≥2 diuretic agents. Renin-Angiotensin system (RAS) blockade use was 59%. Over a prospective follow-up of 1.8 years (IQR 1.0–2.5 years), there were 38 deaths (13%) and 40 HF hospitalisations (14%). Univariate predictors of mortality included age ≥75 years (OR 5.9, p = 0.004), CKD (OR 2.4, p = 0.02) and RAS blockade (OR 0.46, p = 0.05) but not hypertension or diabetes. CKD stage 3–5 was also a predictor of HF hospitalisation (OR 3.9, p < 0.001).

Conclusions: The combination of HFPEF and CKD stage 3–5 identifies high-risk patients in whom frequent review and close attention to fluid balance and diuretic use is warranted.

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Prevalence of Medications Linked to Heart Failure in Hospitalised Patients – A Retrospective Analysis

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Approximately 2% of the Australian population suffer from heart failure. Exacerbations of heart failure affect 158,000 patients costing $2 billion annually. The American Heart Association (AHA) Scientific Statement lists 77 medications that cause exacerbations in heart failure leading to increased hospitalisation. We sought to identify the number of patients admitted to a tertiary hospital with exacerbations of heart failure having been prescribed medications as per the scientific statement.

Patients receiving an ICD-10 coding for heart failure, admitted to Frankston hospital in 2017 were included in this study while patients with new diagnosis of heart failure were excluded. Pharmacy reconciliation performed on admission for each patient was analysed to identify medications implicated in causing exacerbations of heart failure. 601 patients were admitted in the 2017 calendar year. 277 patients were prescribed at least one medication listed in the AHA statement, prior to their admission. 75 of those patients were on two undesirable medications, 11 patients were on three undesirable medications whilst 1 patient was on five of those medications. Metformin was the most commonly prescribed medication (97 patients) followed by pregabalin (87 patients). Other commonly used medications included sitagliptin, tricyclic antidepressant and prazosin. During their hospitalisation, 157 patients had a reduction of one or more medications that are undesirable in heart failure.

The exact contribution of these medications to heart failure exacerbations is unclear. We are currently in the process of analysing if adjustment of these medications has led to a reduction in admissions with exacerbations of heart failure.

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