

**Title:**

Anemia is Associated With Rehospitalizations of Patients With Heart Failure

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**Session Title:**

Research Poster Session 1

**Slot (superslotted):**

RSC PST 1: Friday, 28 July 2017: 10:00 AM-10:45 AM

**Slot (superslotted):**

RSC PST 1: Friday, 28 July 2017: 12:00 PM-1:30 PM

**Keywords:**

anemia, heart failure and hospital admissions

**References:**

Berry C, Poppe KK, Gamble GD, et al. Prognostic significance of anaemia in patients with heart failure with preserved and reduced ejection fraction: results from the MAGGIC individual patient data meta-analysis. *QJM*. 2016; 109: 377-82.

Cooper TJ, Anker SD, Comin-Colet J, et al. Relation of Longitudinal Changes in Quality of Life Assessments to Changes in Functional Capacity in Patients With Heart Failure With and Without Anemia. *The American Journal of Cardiology*. 2016; 117: 1482-7.

Kyriakou M and Kiff PF. Prognosis of the comorbid heart failure and Anemia: A systematic review and meta-analysis. *Clinical Trials and Regulatory Science in Cardiology*. 2016; 16: 12-21.

Lee JH, Lim NK, Cho MC and Park HY. Epidemiology of Heart Failure in Korea: Present and Future. *Korean Circ J*. 2016; 46: 658-64.

Venkateswaran RV, Freeman C, Chatterjee N, et al. Anemia and its association with clinical outcome in heart failure patients undergoing cardiac resynchronization therapy. *J Interv Card Electrophysiol*. 2015; 44: 297-304.

**Abstract Summary:**

As anemia is frequent condition that is often under-diagnosed and untreated, its prevention and early detection may lead to improved clinical outcomes. This study is the first to identify the prevalence of anemia in patients with HF and its influence on hospital readmissions and ED visits in Korea.

**Learning Activity:**

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
1. Learner will be able to explain the impact of anemia in heart failure on rehospitalizations through symptoms aggravation.	This study showed the statistical significance between anemia and rehospitalizations in patients with heart failure.
2. Learner will be able to discuss how to assess and manage anemic status to prevent	Health care provider can give some informations regarding how to assess anemic

prehospitalization in patients with heart failure.	condition and manage symptoms for patients with heart failure.
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**Abstract Text:**

**Purpose:** Anemia is a frequent comorbidity in patients with heart failure (HF). However, the exact incidence of anemia in patients with HF varies widely and little attention has been focused on the relationship between anemia and hospital readmissions or emergency department (ED) visits, and on its health consequences in patients with HF. We aimed to identify the prevalence of anemia and its influence hospital readmissions and ED visits in outpatients with HF.

**Methods:** A cross-sectional study design was used. We enrolled 298 patients with HF from outpatient cardiology clinics at an academic-affiliated hospital in Cheonan, South Korea. The institutional research board of Soonchunhyang University Hospital in Cheonan approved the study protocol. We obtained socio-demographic and clinical information, including frequencies of readmissions and ED visits, using face-to-face interviews and medical record reviews. In this study, anemia was defined for adult men and women according to the criteria of the World Health Organization as a hemoglobin concentration lower than 13.0 g/dL in men and 12.0 g/dL in women. The data were analyzed using SPSS version 23 (IBM Corp., Armonk, NY). *P*values of <0.05 were considered statistically significant. In order to investigate the association between anemia and readmission or ED visits, we adopted a multiple logistic regression model adjusting for age, gender, job, duration of diagnosed HF, NYHA class, hyperlipidemia, use of angiotensin-converting enzyme (ACE) inhibitors, and EF.

**Results:** The prevalence of anemia as assessed using modified World Health Organization guidelines was 111/284 (39.1%) in outpatients with HF. Anemia were significantly more prevalent in patients who were aged 65 and older ( $p < 0.001$ ), those who had no monthly income ( $p = 0.004$ ), those whose HF was diagnosed for one year or longer prior to their visit ( $p = 0.014$ ), those with chronic renal failure (CRF) as a comorbidity ( $p = 0.012$ ), and those with less than 40% of the EF of patients without anemia ( $p = 0.019$ ). Anemia was also significantly more prevalent in patients with BMI ( $p = 0.001$ ) and diastolic blood pressure (DBP) ( $p = 0.002$ ), and those with higher BNP ( $p = 0.024$ ), BUN ( $p < 0.001$ ), and Cr ( $p < 0.001$ ) levels than patients without anemia.

In adjusted multiple logistic regression, anemia was 8.04 times more prevalent (95% confidence interval [CI], 2.19-29.54) in patients readmitted to hospitals. Anemia was also 2.37 times more prevalent (95% CI, 1.22-4.60) in patients visiting the ED.

**Conclusion:** In conclusion, although cardiovascular nurses and allied professionals are aware of the importance of the assessment and treatment of anemia in patients with HF, their specific knowledge on this subject could be improved. Thorough nursing assessments and appropriate nursing interventions are imperative in safeguarding patients with HF presenting with anemia. Future prospective studies targeting interventions to improve anemic conditions are needed to determine whether anemia influences readmission rates and ED visits.