Anemia and chronic kidney disease are associated with poor outcomes in heart failure patients

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Abstract

Background: Chronic kidney disease (CKD) has been linked to higher heart failure (HF) risk. Anemia is a common consequence of CKD, and recent evidence suggests that anemia is a risk factor for HF. The purpose of this study was to examine among patients with HF, the association between CKD, anemia and inhospital mortality and early readmission.

Methods: We performed a retrospective cohort study in two Swiss university hospitals. Subjects were selected based on the presence of ICD-10 HF codes in 1999. We recorded demographic characteristics and risk factors for HF. CKD was defined as a serum creatinine ≥ 124 956;mol/L for women and ≥ 133 µmol/L for men. The main outcome measures were inhospital mortality and thirty-day readmissions.

Results: Among 955 eligible patients hospitalized with heart failure, 23.0% had CKD. Twenty percent and 6.1% of individuals with and without CKD, respectively, died at the hospital (p < 0.0001). Overall, after adjustment for other patient factors, creatinine and hemoglobin were associated with an increased risk of death at the hospital, and hemoglobin was related to early readmission.

Conclusion: Both CKD and anemia are frequent among older patients with heart failure and are predictors of adverse outcomes, independent of other known risk factors for heart failure.

Background

Heart failure (HF) is a common and serious condition that affects more than four million people in the United States [1]. Approximately 400,000 new cases are diagnosed each year, with mortality 6 years after diagnosis of 80% in men and 65% in women [1]. In Europe, the prevalence of symptomatic heart failure in the general population is estimated to range from 0.4% to 2% [2]. In Switzerland, approximately 210,000 people have HF [3]. Chronic kidney disease (CKD) is also a major health problem resulting in considerably increased morbidity, mortality and in high costs [4]. Furthermore, in the last decade, the prevalence of both CKD[5,6], and HF has been rising steadily [7-9]. Anemia is a frequent complica-