Demographics, Clinical Characteristics, and Outcomes of Hospitalized Heart Failure Patients Across Different Regions of Egypt

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OBJECTIVE

The aim of this study was to compare the demographics, clinical characteristics, and outcomes of hospitalized heart failure (HF) patients coming from four distinct geographical areas of Egypt: Alexandria, greater Cairo, Delta governorates and Upper Egypt (UE).

MATERIALS AND METHODS

Study participants were part of the European Society of Cardiology (ESC) HF Long term Registry which enrolled patients from ESC member countries between April 2011 to February 2014. In total, 1,660 hospitalized Egyptian patients were enrolled, 15 were excluded due to incomplete data, leaving 1,645 patients eligible for analysis: 914 from Alexandria (5 centers), 249 from Cairo (5 centers), 409 from the Delta region (6 centers), and 73 from UE (2 centers; Assuit and Beni Suif).

The median age of HF patients varied significantly between the four regions, with the highest in Alexandria, 62.8 years, and the lowest in Upper Egypt, 52.2 years (P<0.01). Females represented one-third of the cohort, and that did not vary across the four regions (P=0.5). Cardiovascular risk factors also varied across regions. Diabetes prevalence was > 45% in Alexandria and Cairo and ≤ 35% in the Delta and UE (P<0.01). Hypertension prevalence was highest in Alexandria, 51.8%, and lowest in UE, 17.8% (P<0.01). Smoking was very prevalent, > 50% in all regions, but uncommon among females in the cohort, less than 9% prevelance.

The most common etiology of HF in the four regions was ischemic heart disease, however the prevalence varied significantly between regions, ranging from 72.5% in Alexandria to 40.9% in UE (P<0.01). The second most common etiology was dilated cardiomyopathy (DCM) in Alexandria and Delta. In Cairo, DCM and valvular heart disease came in second position, whereas in UE it was valvular heart disease. For patients with prior history of HF (62% of the total cohort), community acquired infections was thought to be the most common reason for a HF exacerbation in all four regions, contributing to 34.3% of admissions of the entire cohort. Atrial fibrillation was the second most common reason for a HF exacerbation in Cairo, Delta and UE, where uncontrolled hypertension was the second most common reason in Alexandria. Echocardiographic findings showed similar left ventricular ejection fraction across the 4 regions, ranging from 34.5 to 37.5 (P = 0.6). The most common valvular abnormalities in all regions was mitral regurgitation. UE had the highest proportion of patients with valvular abnormalities.

In hospital mortality was 2.9%, 5.2%, 6.1% and 7.7% for Delta, Alexandria, UE and Cairo (P=0.06). Due to the high proportion of patients lost to follow in Cairo and UE, only Alexandria and the Delta provided meaningful one- year follow up data. At one-year 32% of patients from Alexandria compared to 22.6% from Delta were re-hospitalized for HF (P <0.01). Mortality at one-year was also significantly higher in Alexandria compared to Delta, 31.8% vs 13.2% respectively (P<0.01).

CONCLUSION:

Hospitalized HF patients from different geographic areas in Egypt varied significantly in their demographics, clinical characteristics, and outcomes. Those differences underscore the importance of region- specific HF prevention and management strategies.