

Clinical Predictors of heart failure in patients with diabetes mellitus: insights from a 14-year observational study

Purpose: We aimed to study the evaluate the predictors of the development of congestive heart failure (CHF) among patients with diabetes mellitus (DM) who were admitted to the heart hospital (HH) over a 14-year period.

Methods: We conducted a retrospective analysis for all DM patients who were admitted to HH with various cardiovascular diagnoses in Qatar between 2000 and 2013. Patients were divided into 2 groups: Group I (DM without CHF) and Group II (DM with CHF). Patients' demographics, clinical presentation, and in-hospital outcomes were analyzed and compared.

Results: A total of 15119 DM patients were admitted to the HH over 14 years; of them 3279 (21.7%) had CHF (Group II). in comparison to Group I, patients in Group II were 5 year older and more likely to be females, Arabs, hypertensive, obese and having renal impairment ($p=0.001$ for all). Left bundle branch block (LBBB) was more frequently seen in Group II at presentation ($p=0.001$). History of preadmission aspirin use was more evident in Group II ($p=0.001$). Insulin use was frequently reported in Group II ($p=0.001$). AMI rate was comparable in the 2 groups ($p=0.06$). Hospital length of stay was prolonged in Group II ($p=0.001$). In-hospital mortality was 2-fold greater in Group II ($p=0.001$). On multivariate analysis, predictors of development of CHF among DM patients were female gender, Arabs, presence of hypertension, renal impairment, obesity, LBBB, being on insulin treatment.

Conclusions: CHF is prevalent among DM patients regardless of the underlying cause of admission. Gender, ethnicity, renal impairment, baseline LBBB and insulin treatment play important prognostic role in patients with DM.