Clinical impact of diabetes mellitus and anti-diabetic treatment on long-term follow-up of patients at a Heart Failure Unit

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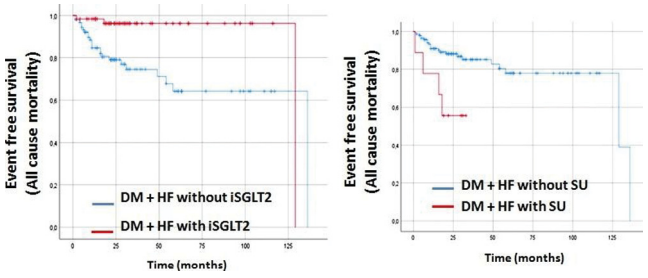
Introduction: Diabetes Mellitus (DM) is a very prevalent metabolic disease in our environment which represents a very frequent comorbidity in patients with heart failure (HF) and is associated with a poorer prognosis. Our aim is to characterize the population with HF that has DM, and to analyze its treatment and impact on the long-term prognosis in terms of mortality and hospital readmissions due to heart failure.

Material and methods: We selected HF cases assisted at the heart failure unit of the HURS, and classified the patients into two groups: Group 1 (without DM) and Group 2 (with DM). Clinical, echocardiographic, and treatment variables were collected, and the impact of DM and its treatment was evaluated in the long term as far as all-cause mortality and hospital readmissions due to heart failure.

Results: A total of 396 patients were selected, out of which 151 had DM (38.1%). The mean age of the cohort was 66±14 years, with a male predominance (66.2%). In relation to non-diabetics, Group 2 had a higher percentage of hypertension (83% vs 56%; p=0.000), hypercholesterolemia (74% vs 40%; p=0.000), ischemic etiology (48% vs 22%; p=0.000), chronic renal disease (40% vs 25%; p=0.001), anemia (35% vs 25%; p=0.037), peripheral vascular disease (38% vs 12%; p=0,000), and there was also greater use of ACEi (73% vs 62%; p=0,022) and thiazides (24% vs 9%; p=0,000). Regarding the treatment used in Group 2 for the metabolic control of hyperglycemia, a predominance of metformin (54.3%), I-SGLT2 (39.7%) and insulin (39.1%) was observed while there was a lower percentage of sulphonylureas (6%). With a mean 70±6 months of follow-up, Group 2 had a similar rate of hospital readmission for HF as non-diabetic patients (49.2% vs 52%; p=0.778). Likewise, with a mean of 58.5±7 months of follow-up, diabetic patients had a similar rate of all-cause mortality as non-diabetic patients (24% vs 22.8%; p=0.460). In relation to the use of I-SGLT2, with a mean of 116.5±7 months of follow-up, HF patients taking I-SGLT2 had a lower all-cause mortality rate than those not taking I-SGLT2 (3.8% vs 30.6%; p=0.019). In diabetic patients taking I-SGLT2, with a mean of 116.5±5 months of follow-up, they had a lower all-cause mortality rate than those not taking I-SGLT2 (3.8% vs 35.8%; p=0.002). In diabetic patients taking sulphonylureas, with a mean of 33±5 months of follow-up, they had a higher all-cause mortality rate than those not taking sulphonylureas (44.4% vs 14.8%; p=0.006).

Conclusion: Diabetic patients with HF have a greater number of comorbidities, although, in our series, it has not been associated with a poorer prognosis in terms of mortality or readmissions due to heart failure. Regarding the treatment used for the metabolic control of hyperglycemia, patients with HF and DM who are treated with I-SGLT2 have a lower all-cause mortality rate. However, diabetic patients with HF who were taking sulfonylureas had a poorer prognosis in terms of mortality.



Kaplan-Meier Analysis