Supplementary material

_____

Differential Effect of Hemoglobin A_{1c} Value and Antidiabetic Treatment on the Risk of 30-day Readmission Following a Hospitalization for Acute Heart Failure

Julio Núñez,[a,*] Clara Bonanad,[a] Juan Paulo Navarro,[a] Lourdes Bondanza,[a] Ana Artero,[b] Silvia Ventura,[a] Eduardo Núñez,[a] Gema miñana,[a] Juan Sanchis,[a] and José REAL[b]

[a]Servicio de Cardiología, Hospital Clínico Universitario, INCLIVA, Universitat de Valencia, Valencia, Spain
[b]Servicio de Endocrinología y Nutrición, Hospital Clínico Universitario, INCLIVA, CIBERDEM and Universitat de Valencia, Valencia, Spain

_____

SUPPLEMENTARY MATERIAL

Table 1 of Supplementary Material.

Baseline Characteristics According to Treatment With Insulin

Variables	Insulin-T2DM (n= 343)	Noninsulin-T2DM (n= 492)	*P*-value
Demographic and medical history			
Age, years	72.8±9.3	72.8±9.7	.958
Male, n (%)	155 (45.2)	269 (54.7)	.007
First admission for AHF, n (%)	145 (42.3)	253 (51.4)	.009
LOS, days*	8 (7)	8 (6)	.208
Hypertension, n (%)	303 (88.3)	410 (83.3)	.044
Dyslipidemia, n (%)	216 (63.0)	277 (56.3)	.054
Current smoker, n (%)	29 (8.4)	56 (11.4)	.169
Previous smoker, n (%)	84 (24.5)	120 (24.4)	.974
Ischemic heart disease, n (%)	188 (54.8)	205 (41.7)	<.001
Valvular heart disease, n (%)	74 (21.6)	106 (21.5)	.992
Charlson index*	3 (2)	2 (2)	<.001
COPD, n (%)	71 (20.7)	108 (21.9)	.665
PAD, n (%)	66 (19.2)	49 (10.0)	<.001
Stroke, n (%)	44 (12.8)	46 (9.3)	.111
Prior known renal failure, n (%)	98 (28.6)	83 (16.9)	<.001
Radiological pleural effusion, n (%)	161 (46.9)	238 (48.4)	.683
Peripheral edema, n (%)	227 (66.2)	306 (62.2)	.238
Vital signs			
Heart rate, bpm	94±23	100±29	.003
SBP, mmHg	152±35	150±36	.428
DBP, mmHg	79±18	82±20	.039
Electrocardiogram			
Atrial fibrillation, n (%)	101 (29.4)	197 (40.0)	.002
QRS >120 mseg, n (%)	100 (29.1)	158 (32.1)	.363
Laboratory			
Hemoglobin, g/dL	11.9±2.0	12.4±1.9	<.001
Leukocyte count, 10^3 cells/mL	10405 ± 4504	10378 ± 3983	.928
Fasting glucose, mg/dL	155±82	142±45	.007
HbA_{1c}, %	7.6±1.4	7.3±1.5	.007
Sodium, mEq/L	138±4	138±5	.617
NT-proBNP, pg/mL*	3367 (4589)	3186 (3951)	.199
CA125, U/mL*	57.0 (101.0)	58.5 (97.6)	.519
Total cholesterol, mg/dL	162±46	164±46	.425
Creatinine, mg/dL	1.42±0.76	1.27±0.61	.001
Urea, mg/dL	73.9±33.8	68.2±31.5	.013
eGFR, mL/min/1.73 m²	54.8±23.1	61.7±24.0	<.001
Echocardiography			
LVEF, %	50.1±15.3	49.5±15.3	.625
LVDD, mm	55±9	56±10	.054
LAD, mm	42±7	43±7	.434
Medical treatment at discharge			
Beta-blockers, n (%)	209 (60.9)	299 (60.8)	.963

ACEI or ARB, n (%)	236 (68.8)	352 (71.5)	.393
Aldosterone antagonist blockers, n (%)	119 (34.7)	171 (34.8)	.985
Furosemide equivalent dose, mg/day*	80 (80)	80 (50)	.001
Sulfonylureas, n (%)	34 (9.9)	154 (31.3)	<.001
Meglitinides, n (%)	10 (2.9)	34 (6.9)	.011
Metformin, n (%)	65 (18.9)	210 (42.7)	<.001
Glitazones, n (%)	0	5 (1.0)	.061
Alpha glucosidase inhibitors, n (%)	3 (0.9)	21 (4.3)	.004
DPP4, n (%)	6 (1.7)	32 (6.5)	.001

ACEI, angiotensin converting enzyme inhibitors; AHF, acute heart failure; ARB, angiotensin receptor blockers; bpm, beats per minute; CA125, antigen carbohydrate 125; COPD, chronic pulmonary obstructive disease; DBP, diastolic blood pressure; DPP4, inhibitors of dipeptidyl peptidase 4; eGFR, estimated glomerular filtration rate; HbA1c, glycosylated hemoglobin; IDDM, insulin-dependent diabetes mellitus; Insulin-T2DM, insulin treated type 2 diabetes mellitus; LAD, left atrial diameter; LOS, length of stay; LVEF, left ventricular ejection fraction; LVDD, left ventricular diastolic diameter; NT-proBNP, N-terminal pro-B-type natriuretic peptide; PAD, peripheral artery disease; SBP, systolic blood pressure.

Values for continuous variables are expressed as mean ± standard deviation.

*Value expressed as the median (interquartile range).

Table 2 of Supplementary Material

Baseline Characteristics According to Treatment With Drugs That Increased the Risk of Hypoglycemia (Insulin, Sulfonylureas, or Meglitinides)

Variables	Ins/SU/MG (n=528)	Non-Ins/SU/MG (n=307)	P-value
Demographic and medical history			
Age, years	73.0±9.4	72.5±9.7	.488
Male, n (%)	257 (48.7)	167 (54.4)	.111
First admission for AHF, n (%)	242 (45.8)	156 (50.8)	.165
LOS, days*	8 (7)	8 (6)	.374
Hypertension, n (%)	448 (84.8)	265 (86.3)	.562
Dyslipidemia, n (%)	316 (59.8)	177 (57.6)	.534
Current smoker, n (%)	47 (8.9)	38 (12.4)	.109
Previous smoker, n (%)	135 (25.6)	69 (22.5)	.316
Ischemic heart disease, n (%)	263 (49.8)	130 (42.3)	.037
Valvular heart disease, n (%)	116 (22.0)	64 (20.8)	.704
Charlson index*	2 (3)	2 (2)	<.001
COPD, n (%)	111 (21.0)	68 (22.1)	.702
PAD, n (%)	83 (15.7)	32 (10.4)	.032
Stroke, n (%)	61 (11.5)	29 (9.4)	.344
Prior known renal failure, n (%)	132 (25.0)	49 (16.0)	.002
Radiological pleural effusion, n (%)	251 (47.5)	148 (48.2)	.852
Peripheral edema, n (%)	342 (64.8)	191 (62.2)	.458
Vital signs			
Heart rate, bpm	96±25	99±29	.219
SBP, mmHg	151±35	149±35	.433
DBP, mmHg	80±19	82±20	.110
Electrocardiogram			
Atrial fibrillation, n (%)	169 (32.0)	129 (42.0)	.004
QRS >120 mseg, n (%)	156 (29.5)	102 (33.2)	.267
Laboratory			
Hemoglobin, g/dL	12.0±2.0	12.5±1.9	.001
Leukocyte count, 10^3 cells/mL	10417±4421	10342±3804	.803
Fasting glucose, mg/dL	151±73	141±43	.039
HbA_{1c}, %	7.5±1.4	7.3±1.5	.010
Sodium, mEq/L	138±4	138±5	.890
NT-proBNP, pg/mL*	3360 (4236)	3131 (3819)	.249
CA125, U/mL*	58.0 (104.0)	56.6 (93)	.771
Total cholesterol, mg/dL	162±45	165±46	.441

Creatinine, mg/dL	1.37±0.71	1.26±0.61	.023
Urea, mg/dL	71.7±32.4	68.5±32.9	.176
eGFR, mL/min/1.73 m^2	57.1±23.9	61.9±23.6	.005
Echocardiography			
LVEF, %	50.4±15.2	48.6±15.4	.104
LVDD, mm	55±9	56±10	.063
LAD, mm	43±7	42±7	.734
Medical treatment at discharge			
Beta-blockers, n (%)	311 (58.9)	197 (64.2)	.133
ACEI or ARB, n (%)	366 (69.3)	222 (72.3)	.361
Aldosterone antagonist blockers, n (%)	180 (34.1)	110 (35.8)	.611
Furosemide equivalent dose, mg/day*	80 (80)	80 (50)	.001
Metformin, n (%)	137 (25.9)	138 (44.9)	<.001
Glitazones, n (%)	3 (0.6)	2 (0.6)	.880
Alpha glucosidase inhibitors, n (%)	10 (1.9)	14 (4.6)	.026
DPP4, n (%)	17 (3.2)	21 (6.8)	.016

ACEI, angiotensin converting enzyme inhibitors; AHF, acute heart failure; ARB, angiotensin receptor blockers; bpm, beats per minute; CA125, antigen carbohydrate 125; COPD, chronic pulmonary obstructive disease; DBP, diastolic blood pressure; DPP4, inhibitors of dipeptidyl peptidase 4; eGFR, estimated glomerular filtration rate; HbA1c, glycosylated hemoglobin; LAD, left atrial diameter; LOS, length of stay; LVEF, left ventricular ejection fraction; LVDD, left ventricular diastolic diameter; NT-proBNP, N-terminal pro-B-type natriuretic peptide; PAD, peripheral artery disease; SBP, systolic blood pressure.

Values for continuous variables are expressed as mean ± standard deviation.

*Value expressed as the median (interquartile range).

Figure of Supplementary Material. Flow chart of patients included in this study.

AHF, acute heart failure; DM, diabetes mellitus.

Flow chart