

Co-morbidity burden and incident hypoglycaemia in patients with type-2 diabetes and heart failure – insight from DiaRegis

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DIAREGIS
DIABETES REGISTRY

Conclusions

- 9.9% of 3,746 patients with oral mono- or dual antidiabetic therapy had anamnestic heart failure at inclusion into the registry
- Patients with HF had increased CV morbidity (CHD, stroke/TIA or PAD), microvasc. complications more hypoglycaemia and incident events at 6 months
- Contraindicated or unfavourable antidiabetic pharmacotherapy is used frequently (SUs, Glitazones [!] etc.)
- Limited adjustment of pharmacotherapy specifically considering to the presence of heart failure, but increased use of DPP-4 inhibitors

1. Background, Methods and Aims

- Data on co-morbidity burden and hypoglycaemia in particular in patients with type 2 diabetes and heart failure are scarce.
- DiaRegis is a prospective registry in type-2 diabetic patients inadequately controlled on oral mono- or dual antidiabetic therapy in which a change of therapy was regarded necessary at baseline by the treating physician.
- For the present analysis 3,746 patients were available.
- 370 patients (9.9%) had anamnestic heart failure (physician reported, not objectively verified within this registry).
- Statistics: Variables are expressed as percent or medians; p-values were determined based on the χ^2 or Mann-Whitney-Wilcoxon test.

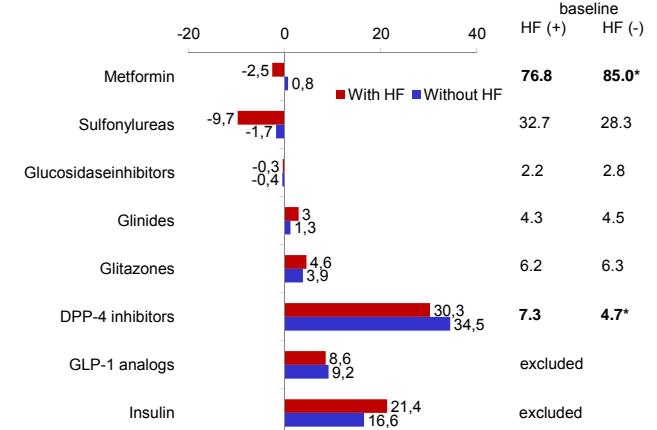
2. Patient characteristics

	With HF (n=370)	Without HF (n=3,376)	p-value
Age (years)	66.1 (59.4-71.6)	57.5 (50.3-65.2)	<0.0001
Female gender (%)	44.1	47.1	0.27
Diabetes duration (years)	6.2 (3.7-9.3)	5.5 (2.8-9.3)	<0.05
BMI (kg/m ²)	31.0 (28.0-35.0)	30.0 (27.0-35.0)	<0.05
Waist circumference (cm)	110 (100-119)	106 (98-116)	<0.001
Total cholesterol (mg/dl)	196 (166-231)	206 (179-232)	<0.001
HDL-Cholesterol (mg/dl)	46 (39-54)	47 (40-57)	<0.01
LDL-Cholesterol (mg/dl)	112 (88-141)	120 (99-145)	<0.01
Triglycerides (mg/dl)	178 (128-255)	176 (127-240)	0.55
HbA1c (%)	7.3 (6.8-8.1)	7.4 (6.8-8.3)	0.05
Fasting plasma glucose (mg/dl)	140 (116-174)	142 (120-170)	0.33
Postprandial plasma glucose (mg/dl)	184 (154-225)	185 (155-220)	0.66

3. Risk factors and co-morbidity

	With HF (n=370)	Without HF (n=3,376)	OR (95%CI)
Dyslipidemia (%)	73.1	62.1	1.66 (1.31-2.11)
Hypertension (%)	95.4	83.1	4.21 (2.57-6.91)
Coronary heart disease (%)	52.9	13.8	7.02 (5.59-8.82)
Stroke / TIA (%)	9.5	4.1	2.44 (1.66-3.60)
PAD (%)	15.6	4.9	3.55 (2.56-4.91)
Amputation (%)	2.2	0.8	2.85 (1.28-6.33)
Autonomous neuropathy (%)	7.2	2.9	2.66 (1.70-4.16)
Peripheral neuropathy (%)	21.0	13.6	1.69 (1.29-2.21)
Non-prolif. retinopathy (%)	6.1	3.5	1.80 (1.12-2.88)
Proliferative retinopathy (%)	1.1	0.5	2.46 (0.81-7.45)
Blindness (%)	1.1	0.1	12.29 (2.74-55.12)
Clinically relevant depression (%)	10.1	4.8	2.26 (1.55-3.29)
Malignancy (%)	1.9	2.0	0.97 (0.44-2.12)

4. Change at baseline (% absolute)



5. Treatment: Patients with vs. without HF

	Baseline OR (95%CI)	6 Months FU OR (95%CI)
Metformin	0.58 (0.45-0.75)	0.50 (0.39-0.64)
Sulfonylureas	1.23 (0.98-1.55)	0.75 (0.57-0.98)
Glucosidaseinhibitoren	0.76 (0.37-1.58)	0.78 (0.34-1.80)
Glinides	0.96 (0.57-1.62)	1.21 (0.77-1.90)
Glitazones	0.99 (0.64-1.55)	1.13 (0.79-1.62)
DPP-4 inhibitors	1.60 (1.05-2.45)	0.98 (0.78-1.23)
GLP-1 analogs	--	0.85 (0.56-1.29)
Insulin	--	1.26 (0.97-1.64)

6. Hypoglycaemia 12 mo. prior / 6 mo. FU

	With HF (n=370)	Without HF (n=3,376)	p-value
Hypoglycaemia (%)	17.8 / 12.1	10.0 / 8.1	<0.0001 / <0.05
without spec. symptoms (%)	6.8 / 6.3	5.1 / 4.1	0.17 / <0.05
Symptoms, without help (%)	11.6 / 9.5	6.8 / 5.4	<0.001 / <0.01
Symptoms, with help (%)	2.7 / 1.1	0.7 / 0.3	<0.0001 / <0.05
Symptoms, with med. help (%)	1.6 / 0.0	0.2 / 0.1	<0.0001 / 0.51
Symptoms, hospitalization (%)	0.5 / 0.0	0.3 / 0.3	0.43 / 0.35

7. 6 months follow-up

	With HF (n=370)	Without HF (n=3,376)	p-value
Events(%)			
Death (%)	0.9	0.3	0.11
Myocardial infarction (%)	0.0	0.1	0.64
Stroke / TIA (%)	1.4	0.3	<0.01
Stable Angina (%)	3.7	1.0	<0.0001
Unstable Angina (%)	2.3	0.2	<0.0001
Percut. coronary intervention (%)	1.1	0.2	<0.01
Peripheral angioplasty (%)	2.0	0.4	<0.0001
Clinically relevant depression (%)	6.3	2.4	<0.0001