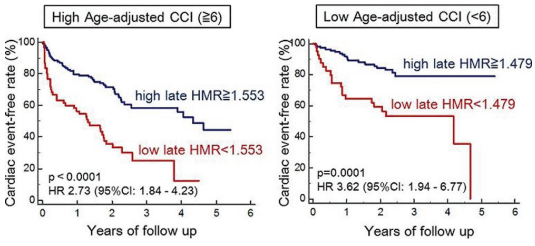
P1819
Impact of comorbidities on the predictive value of cardiac MIBG imaging in patients admitted for acute decompensated heart failure: a prospective comparative study

K. Kayama, T. Yamada, T. Morita, Y. Furukawa, S. Tamaki, Y. Iwasaki, M. Kawasaki, A. Kikuchi, T. Kawai, M. Seo, M. Fukunami. *Osaka General Medical Center, Cardiology, Osaka, Japan*

Background: Comorbidities are associated with poor clinical outcome in patients with chronic heart failure, and cardiac MIBG imaging also provides prognostic information in patients with heart failure. However, there is no information available on the impact of comorbidities on the prognostic value of cardiac MIBG imaging in patients admitted for acute decompensated heart failure (ADHF).
Methods: We studied 354 consecutive ADHF patients with survival discharge. Comorbidity was measured with the Age-adjusted Charlson comorbidity index (ACCI) which is commonly used for the evaluation of the comorbid condition which is weighted and scored, with additional points added for age. Cardiac MIBG imaging were performed just before discharge and the cardiac MIBG heart-to-mediastinum ratio (late HMR) were measured on the delayed image. The endpoint was cardiac event defined as a composite of cardiac death and unplanned hospitalization for worsening heart failure.
Results: During a follow-up period of 2.1±1.4 years, 133 patients had cardiac event. At multivariate Cox analysis, ACCI (p=0.0003) and late HMR (p=0.0001) were significantly and independently associated with cardiac event. Patients with high ACCI (≥6: median value) had a significantly greater risk of cardiac event (47% vs 26%, p=0.0001, adjusted HR 2.22 [1.54–3.23]). In the subgroup of high ACCI≥6, patients with low late HMR (<1.55 determined by ROC analysis) had a significantly greater risk of cardiac event (68% vs 37% p<0.0001, adjusted HR 2.73 [1.84–4.23]). Furthermore, in the subgroup of low ACCI<6, patients with low late HMR (<1.48 determined by ROC analysis) also had a significantly greater risk of the cardiac event (54% vs 26%, p=0.0001, adjusted HR 3.62 [1.94–6.77]).



Conclusions: The prognostic value of cardiac MIBG imaging is not affected by comorbidities and cardiac MIBG imaging provide prognostic information even in patients admitted for ADHF, irrespective of comorbidity burden.

P1820
Evidence-based medication among patients with heart failure and diabetes mellitus - a nationwide study

B.Z. Zareini[1], C.S. Selmer[2], R.R. Roerth[3], S.L.K. Kristensen[3], A.H. Holt[1], M.J. Jensen[3], G.G. Gislason[1], M.S. Schou[4], M.L. Lamberts[3]. *[1]Gentofte University Hospital, Cardiology, Copenhagen, [2]Rigshospitalet - Copenhagen University Hospital, Endocrinology, Copenhagen, [3]Rigshospitalet - Copenhagen University Hospital, Cardiology, Copenhagen, [4]Herlev Hospital - Copenhagen University Hospital, Cardiology, Copenhagen, Denmark*

Background: Presence of diabetes mellitus (DM) carries a poorer prognosis in patients with heart failure (HF). Little is known whether under treatment of HF medication may contribute to worse prognosis in DM patients.
Purpose: To evaluate use of beta-blockers (BB) and renin-angiotensin system inhibitors (RASi) in stable HF patients with and without DM.
Methods: Using nationwide administrative registries, all patients discharged between 2010–2015 following first-time hospitalization for HF were categorized according to DM status. At 6 months, in patients alive, dosages of BB and RASi treatment were estimated as "target dose" (100% of target dose), "suboptimal" (75–99% of target dose), "low dose" (1–49% of target dose) and "no use". HF severity was defined by furix dosage in two groups: as mild (≤80 mg daily) or severe (>80 mg daily). Logistic regression models were used to predict reaching target/suboptimal treatment dosage in patients with DM.
Patients were then followed for 5 years after HF diagnosis to evaluate risk of overall death. Cox regression models adjusted for baseline comorbidities were used to estimate mortality risk.
Results: A total of 38,745 patients were included. 28% (n=8,497) with DM and median follow-up time was 1467 days and 1415 days (p<0.001) for patients with non DM and DM respectively. Patients with DM were younger (median age 73 (IQR(15)) versus 74 years (IQR(18)) and more often males (64% versus 58%) compared to non-DM patients. In the total HF population BB and RASi comprised 67% and 51%, respectively but only 38% and 41% reached target/suboptimal dosages of BB and RASi, respectively.

Table: Use and dosages of beta-blockers (BB) and renin-angiotensin system inhibitors (RASi) among heart failure (HF) patients with and without diabetes mellitus (DM)

	Total HF population		Mild HF		Severe HF	
No. (%)	Non-DM	DM	Non-DM	DM	Non-DM	DM
	30,248 (100)	8,497 (100)	25,350 (100)	6,529 (100)	4,898 (100)	1,968 (100)
Using BB*	20,052 (66)	5,839 (69)	16,868 (67)	4,479 (69)	3,184 (65)	1,360 (69)
Target dose*	6,116 (20)	1,103 (13)	2,932 (12)	890 (14)	513 (11)	213 (12)
Suboptimal dose*	5,806 (19)	1,875 (22)	4,916 (19)	1,469 (23)	890 (18)	406 (21)
Low dose*	10,801 (36)	2,852 (34)	9,020 (36)	2,111 (32)	1,781 (36)	741 (38)
Not using BB*	10,196 (34)	2,658 (31)	8,482 (33)	2,059 (32)	1,714 (35)	608 (31)
Using RASi	15,204 (50)	4,367 (51)	12,805 (51)	3,337 (51)	2,399 (49)	1,030 (52)
Target dose	5,517 (18)	1,588 (19)	4,721 (19)	1,229 (19)	796 (16)	359 (18)
Suboptimal dose	6,731 (22)	1,920 (23)	5,762 (23)	1,483 (23)	969 (20)	437 (22)
Low dose	2,956 (10)	859 (10)	2,322 (9)	625 (10)	634 (13)	234 (12)
Not using RASi	15,044 (50)	4,130 (49)	12,545 (50)	3,192 (49)	2,499 (51)	938 (48)

* p value <0.05

BB use was more pronounced in patients with DM, irrespective of HF severity, while use of RASi was more pronounced in DM and severe HF (Table). Reaching target/suboptimal treatment dosage was more likely in DM for BB (Odds ratio 1.16 [95% confidence interval (CI) 1.08–1.25]) but not for RASi (Odds ratio 0.99 [95% CI 0.93–1.06]) compared to non-DM. The mortality risk was higher in patients with DM compared to non DM (hazard ratio 1.30 [95% CI 1.25–1.35])
Conclusion: Less than half of contemporary real-life HF patients reached target/suboptimal dosages at 6 months. Presence of DM did not seem to be associated with less use of evidence-based HF medication. Contrary, use of BBs is noticeable in diabetic HF patients. Altogether, this suggests that the increased mortality seen in patients with DM and HF compared to HF alone is not explained by systematic underuse of recommended HF medication.

P1821
The effect of beta-adrenergic blockade on weight change and mortality in patients with chronic heart failure

S. Sze[1], P. Pellicori[2], S. Kamzi[1], A. Anton[1], A.L. Clark[1]. *[1]Castle Hill Hospital, Hull, United Kingdom; [2]University of Glasgow, Glasgow, United Kingdom*

Background: Weight loss is common in patients with chronic heart failure (CHF) and is associated with adverse outcome. Activation of the sympathetic nervous system has been implicated in weight loss, wasting and cachexia. However, the effect of sympathetic antagonism on weight change in patients with CHF is not well defined.
Methods: We evaluated changes in body weight, the incidence of cachexia (weight loss >6%) and significant weight gain (>5%) in unselected patients with CHF due to left ventricular systolic dysfunction (LVSD) (LV ejection fraction (LVEF)<40%) and studied the effect of beta-blockade on weight change.
Results: Of the 1480 patients enrolled (median NTproBNP:1651ng/L, median LVEF:31%), 86% received beta-blocker, 11% never had beta-blocker and 3% discontinued beta-blocker between baseline and 1 year.
Patients who did not have or tolerate beta-blocker were more likely to develop cachexia (23% vs 10%, p<0.001) and less likely to have significant weight gain (22% vs 24%, p<0.001) than patient who had beta-blocker.
During a median follow up of 1876 days (IQR: 993–3052 days), 894 (60%) patients died. Higher body mass index (BMI) at baseline, weight gain and beta-blocker therapy were associated with better outcome. Patients who had all 3 features: beta-blocker therapy, baseline BMI ≥25 and significant weight gain had the best outcome (2% mortality at 1 year (Table 1) and 22% mortality at 5 years (table not shown)).
Conclusion: Patients with CHF due to LVSD who receive beta-blocker were less likely to develop cachexia and more likely to have significant weight gain and better outcome compared to patients who did not receive or tolerate beta-blocker.

P1822
ACE genetic polymorphisms and echocardiography findings on ischemic heart failure

G. Duque, F.N. Albuquerque, R.S. Schneider, D.A. Silva, R. Pozzan, R. Mourilhe Rocha, M.L. Alcantara, B.P. Valdigem, S.H. Boghossian, D.C. Albuquerque. *State University of Rio de Janeiro (UERJ), Cardiology, Rio de Janeiro, Brazil*

Background: Angiotensin converter enzyme (ACE) genetic polymorphisms and

Abstract P1821 – Table 1. Percentage 1 year mortality in patient with HeFREF according to categories of weight change, BMI and beta-blocker therapy

		Weight change & BMI categories					
		BMI≥25			BMI<25		
		Weight gain >5%	Weight change –6% to +5%	Weight loss >6%	Weight gain >5%	Weight change –6% to +5%	Weight loss >6%
Beta-blocker treatment	BL & 1y: BB	2% (N=132)	3% (N=455)	8% (N=67)	5% (N=80)	6% (N=146)	15% (N=26)
	BL: no BB; 1y: BB	4% (N=55)	6% (N=151)	8% (N=36)	6% (N=52)	8% (N=60)	15% (N=13)
	BL & 1y: no BB	5% (N=19)	13% (N=70)	11% (N=27)	17% (N=18)	14% (N=21)	18% (N=11)

BL = baseline, 1y = 1 year, BB = betablocker, BMI = body mass index.

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