from cardiovascular (CV) cause, hospitalizations and emergency department visits, and patient satisfaction measured by Consultant Satisfaction Questionnaire (CSQ) at 6 months (all compared between groups). We enrolled 150 patients; demographics were similar between groups, with an average age of 64 years, 62% males, and overall AFEQT baseline score of 66.45 +/- 4.86. NP-led care led to more rhythm monitoring and referrals made to EP. AFEQT scores, EuroQOL EQ-5D-3L, and CV outcomes were not different at 6 months. NP-led care showed higher patient satisfaction (CSQ Professional care [76.32 +/- 11.32 vs 65.75 +/- 15.45, p=0.0006]).

CONCLUSION: We found no difference between NP-led care and usual cardiologist care in AFEQT score at 6 months. NPs working to their full scope resulted in higher patient satisfaction with care compared to usual cardiologist care.

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P091
VARIABILITY IN NOAC DOSE ELIGIBILITY AND ADJUSTMENT ACCORDING TO RENAL FORMULAE AND CLINICAL OUTCOMES IN AF PATIENTS WITH AND WITHOUT CKD: INSIGHTS FROM ORBIT AF II

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BACKGROUND: Non-Vitamin K Oral Anticoagulants (NOACs) are used for prevention of thromboembolism in patients with atrial fibrillation (AF). Guidelines recommend dose adjustment based on kidney function.The most common estimates of kidney function employed in clinical practice are derived from glomerular filtration rate (eGFR), however, product monographs recommend the use of the Cockcroft-Gault creatinine clearance equation (eCrCl) for dose adjustment. We sought to evaluate misclassification of NOAC renal dosing using eGFR versus eCrCl.

METHODS AND RESULTS: We included patients enrolled in Outcomes Registry for Better Informed Treatment of Atrial Fibrillation AF II (ORBIT-AF II) trial. eGFR was calculated using both the Modified Diet in Renal Disease (MDRD) and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) formulae. Dose adjustments and eligibility were based on landmark trials, with eCrCl of 30-50ml/min for rivaroxaban, eCrCl of 30ml/min for dabigatran, and eCrCl of 25 ml/min for apixaban. Dosing was considered inappropriate when use of eGFR resulted in a lower (under-treatment) or higher (over-treatment) dose than that recommended by eCrCl. Agreement in NOAC dosing between eCrCl and eGFR was assessed. The primary outcome of major adverse cardiovascular and neurological events (MACNE) was a composite of cardiovascular death, stroke or systemic embolism, new-onset heart failure (HF), and myocardial infarction. Sensitivity analysis was performed for the subgroup of patients with CKD (eCrCl $<$ 60 ml/min.) Among 8,727 in the overall cohort (median age: 71 (64, 78); medianCHADS2score: 2), agreement between CrCl and eGFR(MDRD and CKD-EPI) was observed in 93.5-93.8% of patients. Among 2,184 patients with CKD, the agreement between eCrCl and eGFR (MDRD and CKD-EPI) was 79.9-80.7%. Dosing misclassification was observed in 11.5% of rivaroxaban and 1.1% of dabigatran and apixaban treated patients. Patients receiving an inappropriate NOAC dose had a lower mean eCrCl and eGFR. Undertreated patients were older and of lower body weight compared to overtreated and appropriately dosed patients. Dosing misclassification was more frequent in the CKD population (41.9% of rivaroxaban, 5.7% of dabigatran and 4.6% apixaban patients). At one-year, undertreated patients in the CKD group had significantly greater MACNE [adjusted HR 2.90 (1.09-7.75) compared to appropriate NOAC dosing group p = 0.03].

CONCLUSION: The prevalence of NOAC dosing misclassification NOACs was high when using eGFR, particularly among those with CKD. Among patients with CKD, potential undertreatment due to inappropriate and off-label renal formulae may result in worse clinical outcomes. These findings highlight the importance of using eCrCl, and not eGFR, for dose-adjustment in all AF patients receiving NOACs.

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P092
WAIST-HIGH COMPRESSION GARMENTS REDUCE ORTHOSTATIC TACHYCARDIA IN PATIENTS WITH POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME IN A COMMUNITY SETTING

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BACKGROUND: Postural orthostatic tachycardia syndrome (POTS) is a common form of orthostatic intolerance. POTS patients have excessive tachycardia, and debilitating symptoms, when upright. There are no approved medications for use in POTS. Compression garments are a non-pharmacological treatment. We have previously demonstrated a reduction in heart rate (HR) and symptoms with body compression in an acute laboratory setting, using a proof-of-principle waist-high compression garment (WHC). We sought to determine the effectiveness of commercially available WHC in a community setting (real-life environment). We evaluated acute response to compression, and response after several hours to determine if benefits are sustained over time.

METHODS AND RESULTS: POTS patients completed 4 x 10 minute standing tests with WHC (ON) and without WHC (OFF), in the morning (AM; acute effects) and afternoon after several hours of use (PM; sustained effects) on one study day (Test 1: AM-OFF, Test 2: AM-ON, Test 3: PM-ON, Test 4: PM-OFF). Test 4 was included as a PM baseline due to

diurnal HR variability. A Holter monitor was provided to record HR, and participants reported Vanderbilt Orthostatic Symptom Scores (VOSS). Data are presented as mean+/- standard error and paired t-tests were used for comparisons. This study is ongoing, with 14 female participants enrolled thus far (mean age: 35+/-2 years). Prescription WHC was used by 11 participants (10-40 mmHg) and 3 participants used athletic-style WHC. Delta HR (supine to standing) was significantly reduced after 30 min of WHC use, compared to baseline without WHC (AM-ON: 26+/-3 bpm vs. AM-OFF: 39+/-4 bpm, $p< 0.001$). After removing the WHC after 3+ hours of use (PM-OFF), HR significantly increased compared to while wearing the WHC (PM-ON; 31+/-4 bpm vs. 22+/-3 bpm, $p=0.007$). VOSS symptoms were significantly reduced after 30 min of WHC use, compared to no WHC (AM-ON: 26+/-3 vs. AM-OFF: 35+/-6, $p=0.007$). After removing the WHC (PM-OFF), there was a significant worsening in VOSS symptoms compared to PM-ON (30+/-5 vs. 24+/-3, $p=0.04$).

CONCLUSION: This simple non-pharmacological treatment is effective in a community setting with commercially available waist-high compression garments. Orthostatic tachycardia and symptoms were reduced in patients with POTS acutely. This benefit was sustained over several hours. This builds on the prior proof-of-principle data by demonstrating use of this treatment in a real-life setting.

Vanier Canada Graduate Scholarship

Canadian Cardiovascular Society (CCS) Abstracts — Heart Failure

P093
A PROPENSITY-MATCHED COHORT STUDY TO ASSESS THE EFFECTIVENESS OF A COMMUNITY HOSPITAL BASED HEART FUNCTION CLINIC

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BACKGROUND: Existing evidence is conflicting in terms of the effectiveness of Heart Function Clinics (HFC) on heart failure (HF) patients' clinical outcomes (emergency department visits, hospital readmissions, hospital length of stay and mortality). Our objectives were to compare the healthcare outcomes for HF patients enrolled in a community hospital-based HFC versus HF patients residing in the same catchment area but not enrolled in the same HFC.

METHODS AND RESULTS: A total of 344 HF patients were referred to an HFC located inside of a community hospital in Ontario between 2014 and 2017, of whom 246 attended their first HFC visit (i.e., index date) between February 1, 2014 and March 1, 2017. We used propensity-scores to match the HFC and control patients diagnosed with HF residing in the Central LHIN in Ontario between 2014-2017 who were not enrolled in the HFC. Primary outcomes were all-cause and HF Emergency Department (ED) visits and all-cause and HF hospitalizations at 6 and 12 months from the index date. Secondary outcome measurement was mortality 6 and 12 months after index date. The HFC patients had reduced all-cause and HF related ED visits 6 months post index date (all-cause ED visit risk difference (RD) of 35.7% versus 16.8% [p=0.0487] and HF ED visit average count reduction of 0.69 versus 0.21 [p=0.0018]) and as well 12 months post index date (all-cause ED visit RD of 18.9% versus 0.3% [p=0.0004] and HF ED visit average count reduction of 0.49 versus 0.15 [p=0.1256]). HFC patients also had reduced all-cause and HF hospitalizations 6 months post index date (all-cause hospitalization RD 39.3% versus 24% [p=0.9394] and HF hospitalization RD 42.2% versus 29.3% [p=0.2194]) and as well as 12 months post index date (all-cause hospitalization RD 26.2%% versus 12.2% [p=0.2771] and HF hospitalization RD 35.1% versus 26.6% [p=0.0678]). Within 6- and 12-months follow-up, 12.2% and 22.4% of HFC patients died versus 24.7% and 32.7% of control patients respectively. The better outcomes of the HFC patients relative to the matched controls was despite the HFC patients having a significantly worse Charlson score (p=0.0076).

CONCLUSION: In this propensity-matched cohort study, we found that a community hospital-based HFC reduced HF patients' ED visits, hospital readmissions and all cause mortality despite the HFC patients having more comorbidities.

Mortality, ED visits and acute care hospitalizations 6-months before and 6-months after first HFC visit, HFC patients vs. matched controls

		HFC Patients (N=216)*			Matched controls (N=922)*			Difference in differences (Matched control difference - HFC patients	
		6-months before	6-months after	Difference (after - before)	6-months before	6-months after	Difference (after - before)	Difference	P value
Mortality									
Mortality (n%)		-	30 (12.2%)**		-	303 (24.7%)**		-	-
ED visits for any reason									
ED visit, n(%)		193 (89.4%)	116 (53.7%)	-35.7	531 (57.6%)	376 (40.8%)	-16.8	18.9	0.0487
ED visit count	Mean ± SD	2.42 ± 2.05	1.28 ± 1.74	-1.14	1.21 ± 1.64	0.80 ± 1.35	-0.41	0.73	0.0907
	Median (IQR)	2 (1 - 3)	1 (0 - 2)		1 (0 - 2)	0 (0 - 1)			
ED visits for heart failure related reasons									
ED visit, n(%)		117 (54.2%)	36 (16.7%)	-37.5	282 (30.6%)	117 (12.7%)	-17.9	19.6	0.1201
ED visit count	Mean ± SD	0.90 ± 1.10	0.21 ± 0.50	-0.69	0.37 ± 0.63	0.16 ± 0.50	-0.21	0.48	0.0018
	Median (IQR)	1 (0 - 1)	0 (0 - 0)		0 (0 - 1)	0 (0 - 0)			
ED visits for non-cardiac related reasons									
ED visit, n(%)		158 (83.6%)	102 (47.2%)	-36.7	561 (59.2%)	316 (34.3%)	-4.90	11.80	0.1156
ED visit count	Mean ± SD	1.33 ± 1.62	1.03 ± 1.55	-0.3	0.77 ± 1.39	0.61 ± 1.13	-0.16	0.14	0.8528
	Median (IQR)	1 (0 - 2)	0 (0 - 1)		0 (0 - 1)	0 (0 - 1)			
Hospitalizations for any reason									
Hospitalization, n(%)		180 (83.3%)	95 (44.0%)	-39.3	466 (50.5%)	244 (26.5%)	-24.0	15.3	0.9594
Hospitalization count	Mean ± SD	1.56 ± 1.20	0.81 ± 1.21	-0.79	0.83 ± 1.13	0.42 ± 0.89	-0.41	0.34	0.8891
	Median (IQR)	1 (1 - 2)	0 (0 - 1)		1 (0 - 1)	0 (0 - 1)			
Total length of stay	Mean ± SD	14.36 ± 14.25	8.05 ± 14.90	-6.31	6.53 ± 14.83	4.64 ± 16.48	-1.89	4.42	0.3675
	Median (IQR)	11 (5 - 19.5)	0 (0 - 12)		1 (0 - 8)	0 (0 - 1)			
Hospitalizations for heart failure related reasons									
Hospitalization, n(%)		133 (61.6%)	42 (19.4%)	-42.2	361 (39.2%)	91 (9.87%)	-29.3	12.9	0.2194
Hospitalization count	Mean ± SD	0.92 ± 0.83	0.25 ± 0.57	-0.67	0.45 ± 0.62	0.13 ± 0.45	-0.32	0.35	0.6187
	Median (IQR)	1 (0 - 1)	0 (0 - 0)		0 (0 - 1)	0 (0 - 0)			
Total length of stay	Mean ± SD	8.24 ± 10.99	2.88 ± 9.08	-5.36	3.07 ± 6.05	1.15 ± 4.94	-1.92	3.44	0.8290
	Median (IQR)	4 (0 - 13)	0 (0 - 0)		0 (0 - 4)	0 (0 - 0)			
Hospitalizations for non-cardiac related reasons									
Hospitalization, n(%)		72 (33.3%)	61 (28.2%)	-5.10	185 (20.1%)	153 (16.6%)	-3.50	1.60	0.8907
Hospitalization count	Mean ± SD	0.47 ± 0.83	0.44 ± 0.88	-0.03	0.28 ± 0.65	0.24 ± 0.63	-0.04	-0.01	0.7819
	Median (IQR)	0 (0 - 1)	0 (0 - 1)		0 (0 - 0)	0 (0 - 0)			
Total length of stay	Mean ± SD	3.69 ± 8.00	4.19 ± 10.79	0.50	2.62 ± 8.64	3.09 ± 15.07	0.47	-0.03	0.9386
	Median (IQR)	0 (0 - 3.5)	0 (0 - 2.5)		0 (0 - 0)	0 (0 - 0)			

* Patients who died in the follow-up period are not included in the analysis.
** Percentage for Mortality is the proportion of all cases (i.e. 246) or matched controls (i.e. 1225) who died in the follow up period.