

**Abstract M139 Table 1** Comparison between frail and non-frail patients with COPD

	Frail (n = 446)	Non-Frail (n = 54)	p value
Age (years)	66 (7)	65 (7)	0.380
FEV <sub>1</sub> % predicted	58 (20)	66 (21)	0.011
BMI (kg/m <sup>2</sup> )	28.2 (5.6)	26.4 (3.2)	0.049
Waist circumference (cm)	100 (15)	94 (10)	0.025
Fat Mass (kg)	27.1 (11)	23.1 (7.2)	0.027
HGS (kg)	26.6 (9.7)	32.5 (10.1)	0.001
Aortic PWV (m/s)	10.0 (2.4)	9.0 (1.9)	0.012
Stroke Volume (ml)	85 (20)	92 (23)	0.042
Central systolic blood pressure	146 (19)	143 (16)	0.377
Central diastolic blood pressure	84 (11)	82 (9)	0.643
Central mean blood pressure	104 (12)	103 (11)	0.605
6MWD (m)	313 (121)	450 (72)	0.001
TUG (s)	11.3 (3.8)	8.7 (1.4)	0.001
Smoking (packs/year)	41 (25)	36 (23)	0.229
No. Exacerbations/ year	2.3 (1)	1.0 (1)	0.001
CRP (mg/L)#	3.6 (2.9)	2.80 (2.2)	0.174
SGRQ	53.1 (19.1)	21.6 (13.6)	0.001

mean (95% CI), 0.15 (0.14–0.16) than in comparators, 0.05 (0.03–0.05), independent of age, p

**Conclusion** Patients with COPD were frail compared with the comparator group of current or ex-smokers, independent of age. Frailty status in the patients was associated with a greater severity of the extra-pulmonary involvement including cardiovascular risk based on greater aortic PWV. Increased aortic PWV in frail patients was independent of blood pressure. These findings are consistent with premature cardiovascular ageing in COPD.

#### REFERENCE

1 Newman et al. *J Gerontol A Biol Sci Med Sci*, 2001;56:M158-66

#### M140 EFFECT OF BETA-BLOCKADE ON LUNG FUNCTION IN A POPULATION WITH ARTERIAL VASCULAR DISEASE WITH AND WITHOUT COPD

A Key, M West, M Parry, F Torella, S Jack, N Duffy, PP Walker. *University Hospital Aintree, Liverpool, UK*

10.1136/thoraxjnl-2014-206260.435

**Introduction** Patients are frequently prescribed  $\beta$ -blockers for heart failure, ischaemic heart disease and peri-operatively, especially for vascular surgery. However,  $\beta$ -blockers remain under prescribed in patients with COPD despite epidemiological evidence indicating little negative impact. This reluctance to use  $\beta$ -blockers is due to concerns about increased airway hyper-responsiveness and bronchoconstriction. As part of a study of peri-operative  $\beta$ -blockade in patients with abdominal aortic aneurysm (AAA) we examined the effect of  $\beta$ -blockers on lung function.

**Methods** We prospectively recruited 55 AAA patients with no selection bias for COPD or  $\beta$ -blocker use. Thirty eight patients successfully completed detailed lung function testing (PFT) measured by body plethysmography both on and off  $\beta$ -blockers. Subjects already taking  $\beta$ -blockers continued usual treatment while others were prescribed weight adjusted bisoprolol for 48 h.

**Results** Mean age was 70 (5) years and 33 (77%) subjects were male. 16/38 (42%) were already taking beta-blockers and 5 people (15%) were diagnosed with COPD although 15 (39%) had COPD based on spirometry. Ten (26%) were current smokers and 19 (50%) ex-smokers. The lung function results are shown

**Abstract M140 Table 1** Change in lung function variables with and without beta-blockade in 38 subjects with and without COPD. # p < 0.05 on vs. off beta-blockers

	COPD (n = 15)		No COPD (n = 23)	
	On	Off	On	Off
$\beta$ -blockers	2.00	2.12	2.83	2.89
FEV1 (L)	(0.48)	(0.55)	(0.59)	(0.61)
FEV1 %	73.7	77.9	104.4	106.3
FVC (L)	(14.6)	(17.2)	(17.5)	(17.9)
FVC (%)	3.59	3.67	3.75	3.69
FEV1/FVC	(0.65)	(0.72)	(0.83)	(0.8)
IC (L)	101.7	103.9	109.9	109.6
RV (L)	(15.8)	(16.4)	(17.92)	(20.2)
TLC (L)	55.4	57.4	75.18	76.3
DLco	(7.6)	(9.0)	(6.4)	(4.6)
DLco (%)	2.84	2.90	2.92	2.84
Kco	(0.55)	(0.36)	(1.57)	(0.6)
Raw	4.08	3.82	2.83	2.75
sRaw	(0.6)	(1.07)	(1.26)	(1.3)
sGaw	7.51	7.51	6.66	6.58
	(1.28)	(1.49)	(1.46)	(1.7)
	5.92	6.04	6.41	6.44
	(2.24)	(2.28)	(1.45)	(1.5)
	73.1	74.8	78.9	80.4
	(24.4)	(25.0)	(15.9)	(16.5)
	1.06	1.06	1.25	1.24
	(0.34)	(0.33)	(0.2)	(0.22)
	2.48	2.61	1.95	2.11
	(0.47)	(1.02)	(0.7)	(0.74)
	12.89 #	11.71	8.35 #	7.61
	(3.25)	(2.76)	(3.3)	(3.2)
	0.09	0.09	0.14	0.14
	(0.02)	(0.03)	(0.06)	(0.05)

in the table. Beta-blockade had no significant impact on most lung function measures in both COPD and non-COPD subjects. Specific airways resistance (sRaw) was significantly higher when subjects were taking  $\beta$ -blockers but this effect did not differ between COPD and non-COPD subjects ( $\Delta$  sRaw: whole group p = 0.004, COPD p = 0.025, non-COPD p = 0.031).

**Discussion**  $\beta$ -blockers had little effect on static lung function including FEV1 and specific conductance. The small change in resistance was seen in subjects with and without COPD. In this population there appears to be no reason for not using a cardio-selective  $\beta$ -blocker both in this peri-operative setting and for cardiac indications.

#### M141 IMPACT OF BETA-BLOCKADE ON EXERCISE CAPACITY AND DYNAMIC HYPERINFLATION IN PEOPLE WITH AND WITHOUT COPD AWAITING VASCULAR SURGERY

A Key, M Parry, M West, S Jack, F Torella, N Duffy, PP Walker. *University Hospital Aintree, Liverpool, UK*

10.1136/thoraxjnl-2014-206260.436

Beta-blockers have a key role in the management of heart failure but have been under-utilised in people with COPD due to fear of bronchoconstriction and its impact on symptoms and function. Beta-blockers are also used peri-operatively in people undergoing vascular surgery due to improved cardiac function though this practice is contentious due to a risk of post-operative complications, particularly stroke. As part of a study looking at