

## Survival in COPD

## S163 THE 'OBESITY PARADOX' IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Poor nutritional status in chronic obstructive pulmonary disease (COPD) is associated with increased mortality independently of disease-severity (Collins *et al*).<sup>1</sup> Epidemiological studies have suggested a protective role of obesity against mortality in COPD (Vestbo *et al*)<sup>2</sup> which is contrary to data from the general population where obesity is associated with decreased life expectancy. This relationship has been referred to as the 'obesity paradox' and has been demonstrated in a number of chronic wasting conditions (Kalantar-Zadeh *et al*).<sup>3</sup> This study investigated the existence of the obesity paradox in outpatients with COPD by examining the effect of body mass index (BMI) on 1-year healthcare use and clinical outcome in terms of hospital admission rates, length of hospital stay, outpatient appointments and mortality. BMI was assessed in 424 outpatients with COPD, with measurements performed by specialist respiratory nurses during outpatient clinics. 1-year healthcare use was retrospectively collected from the date of BMI measurement. Abstract S163 Table 1 Patients classified as overweight (25.0–29.9 kg/m<sup>2</sup>) or obese (>30 kg/m<sup>2</sup>) experienced significantly fewer emergency hospital admissions, as well as a reduced length of hospital stay, in comparison to normal weight (20.0–24.9 kg/m<sup>2</sup>) or underweight (<20 kg/m<sup>2</sup>) outpatients. There was a significant negative trend between BMI classification and mortality. This study supports the existence of the 'obesity paradox' in COPD, not only in relation to reduced 1 year mortality rates but also in terms of reduced emergency hospital admissions and reduced length of hospital stay.

Abstract S163 Table 1

BMI category (kg/m <sup>2</sup> )	<20 (n=67)	20–24.9 (n=144)	25–29.9 (n=120)	>30 (n=93)	p
No. EM admissions per patient	1.5 (3.7)	1.2 (1.7)	0.74 (1.4)	0.71 (1.1)	0.011*
EM LOS (days per patient)	6.5 (12.8)	9.6 (19.3)	5.3 (17.3)	3.6 (9.0)	0.034*
No. ELEC admissions per patient	0.33 (0.75)	0.22 (0.71)	0.20 (0.67)	0.39 (0.90)	0.216*
ELEC LOS (days per patient)	1.94 (7.9)	0.59 (2.6)	0.48 (3.2)	2.1 (13.0)	0.240*
OPA per patient	3.4 (2.5)	4.1 (3.4)	3.4 (2.6)	3.5 (2.6)	0.163*
1-year mortality (%)	21	15	5	4	<0.001†

Values are mean±SD.

\*ANOVA.

†X<sup>2</sup> p-trent.

No, number; EM, emergency; ELEC, elective; LOS, length of stay; OPA, outpatient appointments.

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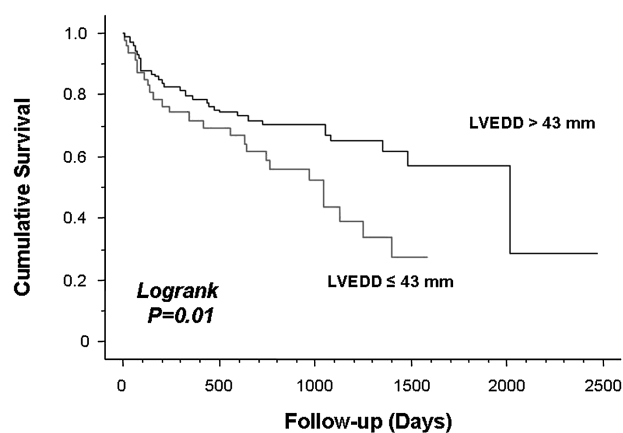
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## S164 DIMINISHED LEFT VENTRICULAR END-DIASTOLIC DIMENSIONS PREDICT AN AMPLIFIED RISK OF DEATH IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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**Background** Left ventricular (LV) dimensions are markedly attenuated in chronic obstructive pulmonary disease (COPD) possibly due



No. at risk	0	500	1000	1500	2000	2500
LVEDD>43mm	100	69	41	11	4	1
LVEDD≤43mm	47	26	12	1	0	0

Abstract S164 Figure 1

to impairments in LV filling that result from increased pulmonary vascular resistance, ventricular interdependence, diastolic dysfunction or incessant tachycardia. Whether reductions in LV size carry adverse prognostic implications in this cohort is unclear.

**Methods** We analysed the relation between echocardiographic indices and mortality in 147 COPD patients (mean [±SD] age 76±10 years, forced expiratory volume in 1 s [FEV1] 0.85±0.34 l, forced vital capacity [FVC] 1.44±0.60 l, FEV1/FVC 0.62±0.16, LV ejection fraction [LVEF] 56±12%) with homogenous right ventricular (42±14 mm Hg) and pulmonary arterial systolic (45±17 mm Hg) pressures.

**Results** Decreased LV end-diastolic (LVEDD ≤37 mm) and end-systolic (LVESD ≤25 mm) diameters, ejection fraction (<45%), and diastolic function (E/A ratio <1 or >2) were evident in 10%, 14%, 18% and 71% of patients, respectively. Lower LVEDDs correlated significantly to lower LVESDs (r=0.83), higher LVEFs (r=-0.54), lower FEV1s (r=0.29), and lower FVCs (r=0.20) but not to age, right ventricular systolic pressures or pulmonary arterial pressures. Over a mean follow-up of 26±18 months, 60 (41%) patients died. Only a lower LVEDD predicted increased mortality (c<sup>2</sup> 4.4, p=0.03) with each 1 mm decrement in LVEDD conferring a 3% escalated risk of death. An LVEDD ≤43 mm optimally predicted mortality and was associated with an 89% reduction in survival compared to an LVEDD >43 mm (Abstract S164 Figure 1). No variable affected the prognostic impact of LVEDDs in adjusted analyses.

**Conclusions** Attenuations in left ventricular end-diastolic diameter forecast an enhanced risk of death in patients with COPD, irrespective of lung function and pulmonary arterial pressures. Improving LV filing and dimensions in this cohort may augment survival.

## S165 DEPRIVATION IS AN INDEPENDENT PREDICTOR OF 1-YEAR MORTALITY IN OUTPATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Deprivation is linked to increased incidence in a number of chronic diseases but its relationship to chronic obstructive pulmonary disease (COPD) is uncertain despite suggestions that the socio-economic gradient seen in COPD is as great, if not greater, than any