Lung function indices for predicting mortality in chronic obstructive pulmonary disease – online supplement

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RESULTS

Additional analyses are presented below to complement those in the main paper. Survival in the population excluding patients on long term oxygen therapy (Table E1, E2) again showed that diffusion capacity is the most powerful predictor of survival.

Table E1. Demographic and clinical characteristics of the COPD population, after excluding those on long term oxygen therapy (n=501)

Age (years)	61.9±9.7
Sex (%)	
Male	65.1
Female	34.9
BMI (kg/m^2)	24.2±5.1
FEV$_1$ (%predicted)	38.4±18.7
FVC (%predicted)	86.5±22.3
FEV1/FVC	35.1±12.6
GOLD classification (%)	
Stage I	2.8
Stage II	20.7
Stage III	34.5
Stage IV	41.9
TLC (%predicted)	125.1±18.8
RV (%predicted)	202.3±58.8
IC/TLC (%)	26.7±8.9
FRC (% predicted)	171.8±39.9
DLco (%predicted)	42.1±17.6
PaO$_2$ (KPa)	9.6±1.3
PaCO$_2$ (KPa)	5.2±0.8
(A-a) gradient (KPa)	4.9±1.3
LTOT (%)	17.1
Smoking status (%)	
Never or Ex smokers	85.7
Current smokers	14.3
Pack-years	43.7±21.1

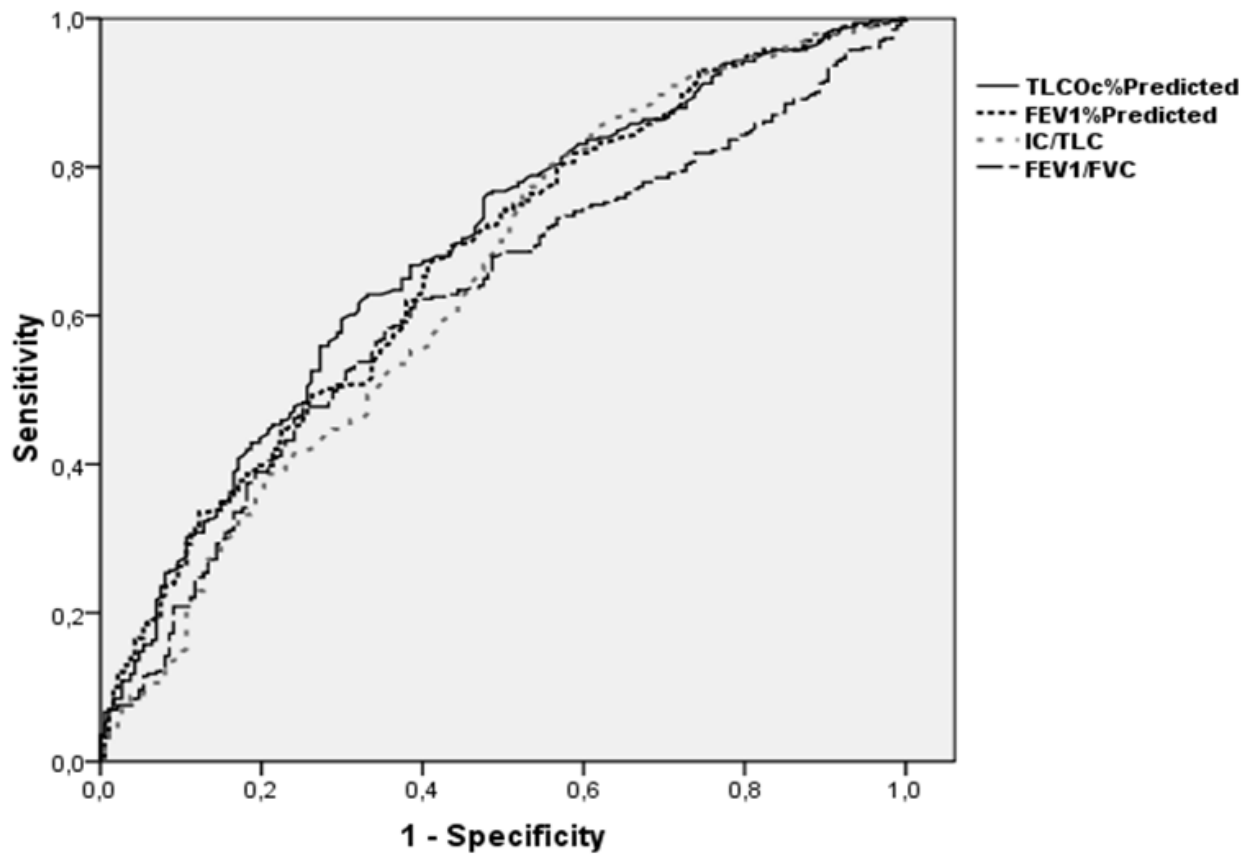| Exacerbations (%)		
0-1/year	41.6	
2-4/year	39.7	BMI:
>4/year	18.8	Body

Mass Index; FEV_1: Forced Expiratory Volume in 1 second; FVC: Forced Vital Capacity; GOLD: Global Initiative for Obstructive Lung disease; TLC: Total Lung Capacity; RV: Residual Volume; IC: Inspiratory Capacity; FRC: Functional Residual Capacity; DLco: Carbon Monoxide Diffusion Capacity; PaO_2: arterial Oxygen Partial Pressure; $PaCO_2$: arterial Carbon Dioxide Partial Pressure; (A-a) gradient: alveolar-arterial Oxygen gradient; LTOT: Long Term Oxygen Treatment

Table E2. Predictors of mortality in the COPD population after excluding patients under LTOT, according to the multivariate Cox regression analysis.

	HR	95% CI	*p*
Age	1.035	1.007-1.065	*0.016*
PaO$_2$	0.831	0.700-0.938	*0.036*
DLco %predicted			*0.041*
Best quartile (>53.95)	0.337	0.159-0.717	*0.005*
Quartile 2 (53.95-39.05)	0.545	0.315-0.942	*0.030*
Quartile 3 (39.05-30.05)	0.790	0.503-1.239	*0.304*
Quartile 4 (<30.05)	reference	reference	-
GOLD stages			*0.637*
Stage I	1.048	0.511-5.046	*0.968*
Stage II	0.594	0.173-2.039	*0.408*
Stage III	0.764	0.408-1.431	*0.401*
Stage IV	reference	reference	-
FVC %predicted	0.979	0.955-1.004	*0.093*
FEV$_1$/FVC	1.006	0.971-1.042	*0.741*
RV %predicted	0.988	0.973-1.003	*0.127*
FRC %predicted	1.026	0.998-1.054	*0.068*
TLC %predicted	1.009	0.971-1.048	*0.645*
IC/TLC	2.009	0.275-3.343	*0.246*
PaCO$_2$	0.909	0.684-1.208	*0.510*
BMI	0.995	0.954-1.037	*0.807*

PaO_2: arterial Oxygen Partial Pressure; DLco; Carbon Monoxide Diffusion Capacity; FVC: Forced Vital Capacity; FEV_1: Forced Expiratory Volume in 1 second; RV: Residual Volume; FRC: Functional Residual Capacity; TLC: Total Lung Capacity; IC: Inspiratory Capacity; $PaCO_2$: arterial Carbon Dioxide Partial Pressure; BMI: Body Mass Index

Figure E1

Figure E1 Receiver operating curves comparing predictive power for survival in COPD patients of lung function parameters. Area under the curve for carbon monoxide gas transfer (DLco) 0.69; Forced expiratory volume in one second (FEV_1) %predicted 0.67; inspiratory capacity to total lung capacity ratio (IC/TLC) 0.64 and FEV_1/FVC ratio 0.62.