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Title: Prognostic predictors in younger and older incident idiopathic pulmonary arterial hypertension

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Body: Background: We have recently shown that there are important phenotypic and survival differences between younger and older incident idiopathic pulmonary arterial hypertension patients (Ling et al, AJRCCM 2012;186:790-6). We sought to establish whether there are different prognostic associations between the two groups. Methods: Observational study of all incident idiopathic, heritable and anorexigen-associated pulmonary arterial hypertension diagnosed in all 8 pulmonary hypertension centres in the UK and Ireland between 2001-9 (n=482). Patients were divided into younger (age ≤50) and older (age >50) subgroups by the median age. Demographic and physiological data at diagnosis were analysed by multivariate Cox regression to determine independent predictors of survival. Results:

Predictors of survival according to age subgroups

Multivariate analysis	Age≤50		Age>50	
	p-value	hazard ratio(95% CI)	p-value	hazard ratio(95% CI)

Age	NS	-	0.001	1.047(1.018-1.077)
BMI \geq 30*	0.017	2.428(1.172-5.029)	0.037	0.570(0.336-0.967)
6MWD	NS	-	NS	-
mPAP	0.004	1.028(1.009-1.048)	NS	-
%DLCO	<0.001	0.957(0.938-0.976)	NS	-
SvO2	0.026	0.962(0.930-0.995)	0.01	0.961(0.933-0.991)

CI = confidence interval, NS= not significant, *BMI<30 is the reference group, mPAP = mean pulmonary arterial pressure, %DLCO = % predicted diffusion capacity for carbon monoxide, SvO2 = pulmonary arterial oxygen saturation

Conclusion: While we have shown that younger and older patients with idiopathic pulmonary arterial hypertension have different characteristics and survival, here we show that there may also be some different associations with survival between the two groups which merit further evaluation.