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Title: Cardiac autonomic nervous system is normal in dairy farmer with mild/moderate COPD

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Body: Background: A dysregulation of the cardiac autonomic nervous system, studied by baroreflex sensitivity (BRS), has been shown in patients with COPD related to cigarette smoking. Several factors including hypoxemia, poor physical fitness and pulmonary hyperinflation have been suspected. Occupational COPD is frequent in dairy farmers, but patients' characteristics might be different compared with smoking-related COPD. Objective: To examine the presence and eventually the causes of cardiac autonomic nervous dysregulation in dairy farmers with COPD. Methods: BRS was compared between 2 groups of patients with mild/moderate COPD (related either to cigarette smoking or to dairy farming) and 2 groups of healthy matched controls. Peak workload served to evaluate physical fitness. Pulmonary hyperinflation was judged by the ratio of inspiratory capacity (IC) on total lung capacity (TLC). PaO₂ was measured at rest. Results: The main results are given in a Table.

Main characteristics of COPD patients and controls

	Dairy farmers		Cigarette smokers	
	COPD (n=32)	Controls (n=32)	COPD (n=39)	Controls (n=12)
Age (yrs)	59±10	58±10	62±8	63±6
FEV1 (% pred)	87±14#	105±10	84±13#	108±12
IC/TLC (%)	46±9	48±7	46±4	47±7
DLCO (% pred)	85±11	93±13	74±14*#	94±14
PaO ₂ (mmHg)	79±10	81±7	74±9*#	80±8

Peak workload (% pred)	84±29#	101±32	83±29#	98±24
BRS (ms/mmHg)	9.9±4.9	9.7±4.4	7.5±3.1*#	9.8±4.2

*p<0.05 vs. COPD in dairy farmers. #: p<0.05 vs. Controls

There was a positive correlation between PaO₂ and BRS (r²=0.16; p<0.0001) Conclusions: Depressed baroreflex sensitivity, a characteristic of smoking-related COPD, was not found in dairy farmers with mild/moderate COPD. This difference could be due to a lower PaO₂ in smoking-related COPD patients.