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Title: Oxygen therapy or not: That is the question

Dr. Sabrina 33842 Della Patrona sabrina.dellapatrona@fsm.it MD ¹, Dr. Andrea 33843 Zanini andrea.zanini@fsm.it MD ^{1,2}, Dr. Maria Elena 33844 Altieri elena.altieri@fsm.it MD ¹, Dr. Silvia 33845 Casale s.casale87@gmail.com MD ¹, Dr. Veronica 33846 Leoni vero.leo@tin.it MD ¹, Dr. Marco 33847 Moscheni shumiro@live.it MD ¹, Dr. Francesca 33853 Cherubino francesca.cherubino@fsm.it ¹ and Prof. Dr Antonio 33860 Spanevello antonio.spanevello@fsm.it MD ^{1,2}. ¹ Division of Pneumology, IRCCS Maugeri Foundation, Tradate, VA, Italy, 21049 and ² Department of Clinical and Experimental Medicine, University of Insubria, Varese, VA, Italy, 21100 .

Body: Rationale: The utility of oxygen therapy has been demonstrated in patients with COPD with respiratory failure. Two historic studies conducted at the end of the 70s (Nocturnal Oxygen Therapy Trial (NOTT) and British Medical Research Council/MRC)) have demonstrated that LTOT (>15 hours/day) improves the survival of patients with severe COPD associated to hypoxemia at rest, but what happens to patients that desaturate during exercise and during night in the absence of hypoxemia at rest and without oxygen therapy? Material and methods: 31 COPD patients with moderate-severe airflow obstruction and hospitalized in our division between 2009 and 2012 for pulmonary rehabilitation, were retrospectively analyzed. They were divided in two groups: hypoxemic at rest with prescription of continuous oxygen (group 1) and hypoxemic only during exercise and during night not treated with oxygen supplementation (group 2). Results: Baseline characteristics of patients are reported in table 1 (Mean±DS). During three years of observation no significant difference between the two groups was identified on mortality, cardiovascular events, hospitalizations, exacerbations, decrease in gas exchange and in the respiratory function.

	Age (years)	Gender (M,F)	FEV1 (% pred)	VC (% pred)	FEV1/VC (%)	PaO ₂ /FiO ₂ (mmHg)	PaCO ₂ (mmHg)
Group 1 (20)	72±9	14/6	43.1±12.5	74±14.5	42.2±9	274±43	44.4±5
Group 2 (11)	71±7	8/3	55±15.5*	92,3±15.3*	45±9.5	313±16*	37±3*

*p<0.05

Conclusions: In conclusion, the presence of desaturation during exercise and during night doesn't seem to

justify the oxygen prescription in these COPD patients. The desaturation correction did not modify the described outcomes.