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Title: Effectiveness and safety of a protocolized mechanical ventilation and weaning strategy of COPD patients by respiratory therapists

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Body: Objectives: To evaluate the impact of a mechanical ventilation protocol applied by a respiratory therapist (RT) on the outcomes in COPD patients. Methods: A novel mechanical ventilation protocol was initiated by a respiratory therapist. Outcomes of patients during a 6-month period were compared to those of patients treated by physicians without a protocol during the preceding 6 months. Results: A total of 170 patients were enrolled. Extubation success was higher (98% vs. 78%, p= 0.014) and median durations of weaning, mechanical ventilation (Figure 1) and ICU stay (Figure 2) were shorter in the protocol group (2 vs. 26 hours, log rank p < 0.001, 3.1 vs. 5 days, log rank p < 0.001 and 6 vs. 12 days, log rank p < 0.001 respectively).

Patients in the protocol group were more likely to come off the ventilator earlier (HR: 2.31, 95 % CI: 1.54-3.48, adjusted for age, APACHE II and PaCO₂) Conclusions: Protocolized mechanical ventilation and weaning strategy applied by respiratory therapists may improve weaning success and shorten the total duration of mechanical ventilation and ICU stay in COPD patients requiring mechanical ventilation.