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Title: Proportional assist ventilation versus conventional synchronized intermittent mandatory ventilation in chronic obstructive pulmonary disease

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Body: Background: Proportional assist ventilation (PAV) is a physiological mode of ventilation with better patient ventilator synchrony. However its role in intubated COPD patients is still not well defined. Objective: To evaluate the efficacy of PAV mode in intubated patients with COPD exacerbation in comparison with conventional SIMV mode. Patients& Methods: 50 COPD patients presented with hypercapnic respiratory failure who are intubated and ventilated were recruited to the study. 25 patients were shifted to SIMV mode (G1) while the other 25 patients shifted to PAV mode (G2). Results: Both groups were comparable on admission and after 2 hours of assisted control. The mean age for G1 was 60.6 ± 5.9 Vs 61.0 ± 5.2 for G2 with male sex predominance in both groups. The successful outcome was achieved in 19 patients (76.0%) in G1 Vs 18 patients (72.0%) in G2. Comparison between both groups after 2 hours of ventilation regarding vital signs, gasometric parameters and mechanical parameters was shown in

Comparison between both groups after 2 hours of ventilation with SIMV &PAV

Parameter	G1[mean±SD]	G2[mean±SD]	P value
Respiratory Rate	17.2±1.8	23.8±1.6	<0.001
Heart Rate	84.5±4.1	105.6±3.4	<0.001
Systolic BP	114.8 ±4.8	136.2 ±10.9	<0.001
pH	7.39 ±.04	7.34 ±.08	<0.01
PaCO ₂	56.8 ±5.9	65.4 ±5.1	<0.001
PaO ₂	87.4 ±12.1	86.7 ±12.2	NS
Peak pressure	33 ±4.8	23 ±3.3	<0.001
Auto PEEP	4.9 ±0.9	1.5 ±0.7	<0.001
RRpt-RRvent	3.0 ±0.8	0.6 ±0.4	<0.001
Tidal volume	430 ±20	390 ±59	<0.01

Conclusion: PAV can maintain improvement of respiratory distress and gas exchange in intubated COPD patients with the advantages of less airway pressure, less autoPEEP and better patient- ventilator synchrony compared with SIMV.