Weaning in Chronic Ventilator-dependent Patients

Wong KC(1), Szeto CH(1), Tse C(2), Lee D(1), Shum W(1), Yee W(1), Chan K(1) and Lee YM(1)

(1)Department of TB and Chest, (2)Department of Physiotherapy, Wong Tai Sin Hospital

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Introduction
Chronic ventilator-dependent (CVD) patients are often weak, severely deconditioned and a substantial proportion of them have developed critical illness polynuero-myopathy which amongst others factors is attributable for chronic ventilator dependency. The care approach to these patients involves (i) Triaging those with weaning & rehabilitation potential for further weaning attempt (ii) Slow-paced weaning and (iii) Multidisciplinary rehabilitation.

Objectives
According to the consensus statement of NAMDRC published in Chest 2005, most ventilator patients who could be weaned had been weaned within 3 months. We report successful weaning of 2 recent CVD patients in our department, who had been put on continuous mechanical ventilation (MV) for over 3 months.

Methodology
The first case was a 57-year-old man who had hypoxic brain damage post-resuscitation for cardiac arrest due to myocardial infarction. He had been ventilator dependent for 4 months before transfer to us. Spontaneous eye opening & decortic rate rigidity were evident. He had been put on synchronized intermittent mandatory ventilation (SIMV), RR 10/minute, PS 13 cmH2O, PEEP 5 cmH2O and FiO2 of 30%. He was triaged for further weaning attempt as he showed sustained spontaneous breathing (SSB) and a relatively preserved Glasgow coma scale (GCS) score. The ventilatory support was gradually withdrawn by reducing the RR and PS in
small decrements. His tolerance of weaning was monitored by rapid shallow breathing index, oxygen saturation and end-tidal CO2. Spontaneous breathing trial (SBT) commenced once PS was reduced to 4 cmH2O with gradual prolongation of the SBT daily. The second case was a 59-year-old female with cerebellar infarct and obstructive hydrocephalus who had been ventilator dependent for over one year post craniotomy. Similar to case one, she had been put on SIMV/PS and had demonstrated SSB and a preserved GCS score. In addition to a slow-paced weaning protocol, she was given active upper limb & shoulder girdle resistance exercise and inspiratory muscle training, as part of the rehabilitation.

**Result**
Case one was completely weaned off from MV, while case two was liberated from MV during daytime at the time of writing and weaning of nocturnal ventilation would continue. These 2 cases illustrate that in carefully selected cases of CVD patients, a rehabilitation approach with a slow-paced weaning protocol can successfully liberate them from MV.