USE OF THE MEDIVENT RTX™ RESPIRATOR, A BIPHASIC NON-INVASIVE CUIRASS VENTILATOR, IN NEUROLOGICAL DISEASE COMPLICATED BY ACUTE RESPIRATORY FAILURE.: 607

[Oral Presentations: Case Reports: Respiratory]

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The Medivent RTX™ Respirator is a non-invasive ventilator consisting of a chest-fitted cuirass connected to a computer driven pump. In the secretion clearance (physiotherapy) mode the cuirass is applied 4 hourly. High frequency chest vibrations (240-1200 cycles per minute (cpm), I:E ratio 1:1) are interspersed with a cough mode to expel loosened secretions (8-60 cpm, I:E ratio variable up to 6:1). The Respirator may be used on its own or to complement other forms of respiratory therapy. This abstract describes the use of the Respirator in two patients with neurological problems to clear secretions, either shortening the time to extubation or avoiding the need for intubation. Case 1: A 58 year-old quadriplegic man (C6 #) was admitted to the ICU with acute respiratory failure secondary to pneumonia. He was intubated and ventilated (assisted pressure ventilation, SIMV, PEEP 12 cm H₂O, pressure support 12 cm H₂O). Arterial oxygen saturation (SaO₂) was stable at 95% (FiO₂ 0.5), but weaning was delayed by retained secretions that could not be cleared by conventional physiotherapy. While still ventilated the patient was commenced on secretion clearance using the RTX™ Respirator (600 cpm, 4 hourly). After 8 treatments secretion clearance improved and FiO₂ requirement decreased to 0.4). The patient could then be extubated. Case 2: A 72 year-old man with Parkinson's disease and multisystem atrophy presented with acute respiratory failure secondary to pneumonia. He was breathing spontaneously (rate 30 breaths/minute SaO₂ > 95%, FiO₂ 0.5), but PCO₂ was persistently > 8 kPa. The patient was commenced on BiPAP, and secretion clearance was provided by the Respirator (600 cpm, 4 hourly). Chest X-ray appearances and spontaneous respirations gradually improved. After 48 hours BiPAP could be discontinued.

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