UTILITY OF AN AUTO-TITRATING PROTOCOL FOR THE SETUP OF NOCTURNAL NON-INVASIVE VENTILATION

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Background The prevalence of conditions requiring nocturnal breathing support is increasing. Evidence is accumulating that early delivery of optimised nocturnal non-invasive ventilation (nNIV) improves acceptability and longer term NIV usage. The AVAPS-AE (adaptive volume assured pressure support with auto-EPAP) mode of the Respironics A40 ventilator offers prospects of fully auto-tritrated NIV. After obtaining initial experience, we adopted use of this ventilator mode for initial nNIV titration in patients with nocturnal hypoventilation (excluding those with neuromuscular disorders), with aim of improving service efficiency and patient outcomes.

Methods Patients with nocturnal hypoventilation disorders (majority obesity-related) attend our tertiary inpatient breathing support service. In early 2014 we established a protocol for auto-NIV setup which consists of first night sleep study with morning capillary blood gases (+ancillary cardiorespiratory investigations if indicated), second night on AVAPS-AE mode NIV and then transition on third night to fixed ST mode bilevel NIV based on the A40 ventilator report, supported by appropriate improvement and then stability in sleep quality, daytime symptoms, ventilator integration, overnight transcutaneous and morning blood gas measurements.

Results Between March 2014 and June 2016 103 patients received AVAPS-AE mode ventilation for initial setup or re-titration of nNIV. The majority of patients tolerated auto-NIV setup protocol well, and were discharged on ‘fixed’ NIV using a less expensive generator with the A40 derived settings, and did not subsequently require ventilator adjustments. Auto-NIV derived settings typically indicated higher backup rates and unpredictable IPAP/EPAP requirements compared with previous experience. 21 patients continue on AVAPS-AE mode NIV long term based on high pressure support or labile ventilation requirements with suboptimal clinical parameters on fixed NIV. Mean length of stay for breathing support assessment has been reduced by >1 day since the adoption of auto-NIV setup protocol, and clinic follow up has also been rationalised.

Conclusion Auto-NIV setup protocol achieves significant service efficiencies. This patient cohort will continue to be studied to judge other clinical benefits, but prospective clinical trials with AVAPS-AE or similar ventilator modes for acute NIV and elective outpatient nNIV are justified.
RISK FACTORS AND SHORT-TERM OUTCOMES OF DEVELOPING POSTOPERATIVE PULMONARY COMPLICATIONS AFTER VATS LOBECTOMY

Introduction

Postoperative pulmonary complications (PPC), such as pneumonia and atelectasis are associated with poor outcomes following thoracotomy and lung resection, with risk factors identified. Video-assisted thoracoscopic surgery (VATS) is increasingly performed, however, there are varying reports regarding the incidence of PPC with little is known about their effect on short-term outcomes or potential risk factors.

Methods

A prospective observational study of consecutive patients undergoing VATS lobectomy was performed in a regional centre (2012–2016). Exclusion criteria included re-do VATS/completion lobectomy. All patients received physiotherapy assessment/intervention as necessary from postoperative day 1 (POD1). The presence of PPC was determined daily using the Melbourne Group Scale. Outcomes included hospital length of stay (LOS), intensive therapy unit (ITU) admission and hospital mortality.

Abstract S60 Figure 1 30 and 90 day survival by trust