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Weaning in Designated Invasive Mechanical Ventilation Beds of Medical Departments

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Introduction

Respiratory failure patients requiring invasive mechanical ventilation(IMV) are critically ill. It is well known that mortality would be high if such patients were managed in general medical beds. In September 2014, a pilot program of designated IMV beds was launched in Medical Departments of five hospitals (Kwong Wah Hospital, North District Hospital, Pamela Youde Nethersole Eastern Hospital, Queen Elizabeth Hospital and United Christian Hospital).

Objectives

Compare weaning outcomes of patients in IMV beds and general beds

Methodology

A review was conducted on patients receiving IMV support in Medical Departments of five hospitals from 1 November to 31 December 2014. Baseline characteristics, diagnoses and weaning outcomes were compared between patients in IMV beds (MVB) and general medical beds(GMB). Patients were classified under three weaning categories (simple, difficult and prolonged) based on their response to initial weaning and time taken to achieve successful weaning.

Result

During the two-month period, 114 patients (58 MVB, 56 GMB) were studied. Mean age was 75 years for both groups. Pneumonia was the commonest diagnosis among MVB patients (29%) compared to 14% among GMB patients. Post-cardiac arrest was the commonest condition for GMB patients (29%) compared with 19% in MVB patients. Other diagnoses included stroke (MVB 14%, GMB 13%), acute pulmonary

oedema (MVB 7%, GMB 13%), chronic obstructive pulmonary disease (MVB 7%, GMB 7%) and myocardial infarction (MVB 2%, GMB 9%). Forty-nine percent MVB patients were independent in activities of daily living(ADL) compared with 63% GMB patients. Thirty-six MVB patients and 40 GMB patients underwent weaning trials. Ninety-two percent MVB patients (33/36) were successfully weaned compared to 45% GMB patients (18/40). Fifty-five percent (18/33) MVB patients and 94% (17/18) GMB patients were classified under simple weaning category. Fifteen percent (5/36) MVB patients and 1% (1/18) GMB patients were under difficult weaning category. Thirty percent (10/36) MVB patients belonged to the prolonged weaning category. However, 4% GMB patients were re-intubated. Forty-two percent MVB patients (compared with 6% GMB patients) were transitioned to non-invasive ventilation for weaning. Thirty-one percent MVB patients were discharged home compared with 20% GMB patients.

Conclusion Due to their marginal premorbid status, some medical patients on IMV might not be admitted to intensive care unit. IMV beds were established to facilitate the care of such critically ill patients in medical wards. Despite their challenging weaning characteristics, this study showed that patients cared in IMV beds could benefit from a higher weaning success rate than those in general medical beds.

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