Chronic Ventilator Service- towards a new paradigm of standards

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Introduction

WTSH has been designated to further manage chronic ventilator-dependent (CVD) patients from acute medical wards of the Kowloon clusters, as a COC (Medicine) annual plan programme funded under resource allocation exercise (RAE) for service enhancement since 2015; before then we have been running the service in 2004-2014 without any extra resources.

Objectives

Centralizing care of CVD patients in specialized, respiratory centre serves the purposes of i) alleviating burden of acute hospitals and ii) improving health outcomes.

Methodology

Adult patients requiring continuous, invasive mechanical ventilation for 60 days or more were eligible for admission to our centre. CVD patients assessed to have weaning/rehabilitative potentials are triaged for multi-disciplinary rehabilitation for further weaning attempt and/or preparing for home mechanical ventilation. Health outcomes of the RAE cohort (n=18) treated in 2015-17 are compared with our historic controls (n=43) in 2004-2014.

Result

There are no significant differences between the RAE cohort (n=18) and the historic controls (n=43) in gender, mean age and the mean & median days of mechanical ventilation before transfer. The mean age (SD) of the RAE cohort (10M, 8F) and historic controls (21M, 22F) are respectively 62.2 (15.8) and 73 (13.5); P=0.077. The mean (SD) and median number of ventilator days before transfer in the two groups

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are 506.1(1123) & 105 versus 139.7 (136.5) & 97; P=0.19. There is no significant
difference between the two groups in the distribution of disease categories attributed
for ventilator dependency. Neuromuscular diseases were 22.2% vs 16.3%, CNS
disorders 38.9% vs 16.3%, COPD/Asthma 27.8% vs 14.0%, and Post cardiac arrest
5.6% vs 7.0% in the two groups, with corresponding P-values of 0.593, 0.074, 0.232
and 0.899. 5.6% in the RAE cohort had interstitial lung disease and 46.5% in the
historic controls had other diseases. There is significant increase in weaning success
in the RAE cohort 2015-17, compared with the historic controls 2004-2014: 33.3% vs
7.0%; P=0.017. There are also significant reduction in the one year mortality (16.7%
vs 69.8%; P=0.0002) and prevalence of long term mechanical ventilation cases
(44.4% vs 83.7%; P=0.003) in the RAE cohort, compared with the historic controls.
With funding to effect a multi-disciplinary rehabilitative approach, health outcomes of
CVD patients including weaning success and survival can be improved.