European Respiratory Society
Annual Congress 2013

Abstract Number: 4044

Publication Number: P4921

Abstract Group: 2.1. Acute Critical Care

Keyword 1: Mechanical ventilation **Keyword 2:** Respiratory muscle **Keyword 3:** Critically ill patients

Title: VIDD during weaning: Comparison between pressure controlled and pressure support ventilation

Dr. Ulrike 25271 Olgemoeller uolgemo@gwdg.de MD [1], Dr. Wolfgang 25272 Koerber koerber@ekweende.de MD [1] and Prof. Dr Carl-Peter 25273 Criée criee@ekweende.de MD [1]. [1] Pneumology and Respiratory Care Medicine, Evangelisches Krankenhaus Göttingen-Weende GGmbH, Göttingen, Germany, 37075 .

Body: Background: Mechanical ventilation (MV) is a life-saving treatment in acute respiratory failure. Invasive controlled MV induces diaphragm muscle dysfunction (ventilator-induced diaphragmatic dysfunction, VIDD). The existence of VIDD is scientifically proven in animal models and there is strong evidence for the occurrence of VIDD in humans (Jaber et al. AJRCCM 2011). The purpose of this study was to assess diaphragmatic strength in patients during prolonged weaning being ventilated with different modes. Methods: In 22 patients we measured the endotracheal pressure after bilateral anterior magnetic stimulation of the N. phrenicus (twPet) as an index of diaphragmatic strength. After a 24-hour-period of controlled ventilation we randomized the patients in a group with controlled ventilation (group 1) and a group undergoing ventilatory support in an assisted mode (group 2) during the next 5 days. Results: TwPet at the time of admission was decreased in both groups (group 1: 0,33 kpa; group 2: 0,39 kpa) compared to normal values of Twitch mouth pressure in our laboratory (1,9 kPa). In group 2 twPet increased significantly from 0,39 kpa to 0,66 kpa (p=0,0195*) whereas it shows only a small, not significant (p=0,99) increase in group 1 from 0,33 kpa to 0,35 kpa.

Conclusions: In patients who were ventilated in the assisted mode the increasing twPet could indicate a quicker recovery of the diaphragma from VIDD.