



Intrapulmonary percussion with autogenic drainage and ventilator-associated Gram-negative infection: A pilot study

H. Spapen, M. Borremans, M. Diltoer, J. De Regt, C. Bruggemans, P.M. Honoré

Intensive Care Department, University Hospital, Vrije Universiteit Brussels, Brussels, BELGIUM.

BACKGROUND: Intrapulmonary percussive ventilation with assisted autogenic drainage physiotherapy (IPV-AADP) is a compelling form of chest physiotherapy (CPT) in mechanically ventilated critically ill patients. We evaluated the effect of IPV-AADP on the occurrence of Gram-negative infection-related ventilator-associated complications (IVACs).

METHODS: Patients requiring mechanical ventilation for at least 48 hours were randomly assigned to receive either IPV-AADP, conventional CPT (CoCPT) or no CPT (NoCPT). Standard institutional prevention measures of ventilator-associated infection were guaranteed in all subjects. The study endpoint was the presence of IVACs as documented according to the Centers of Disease Control 2011 Working Group guidelines. Statistical analysis used non-parametric tests for independent samples and Fisher's exact test to compare treatment groups.

RESULTS: Forty-five patients (24 males, 21 females) were enrolled with 15 subjects included in each study arm. IPV-AADP patients were younger (46+/-17 years) than CoCPT (62+/-18 years) and NoCPT (64+/-16 years) subjects ($p=0.014$; IPV-AADP vs. CoCPT and NoCPT) but APACHE II scores were comparable between the groups (20+/-8, 23+/-10 and 21+/-6 respectively for IPV-AADP, CoCPT and NoCPT subjects, $p=NS$). Gram-negative IVACs were diagnosed in two patients (13%) in the IPV-AADP group, seven patients (47%) in the CoCPT group and seven patients (47%) in the NoCPT group ($p=0.10$; IPV-AADP vs. CoCPT and seven patients (47%) in the NoCPT group ($p=0.10$; IPV-AADP vs. CoCPT and NoCPT).

CONCLUSION: In this small pilot study, adjunctive IPV-AADP tended to decrease the occurrence of ventilator-associated Gram-negative infection as compared with CoCPT and NoCPT.

KEYWORDS: Chest physiotherapy, intrapulmonary percussive ventilation, assisted autogenic drainage, infection-related ventilator-associated complications, gram-negative

NETH J CRIT CARE - VOLUME 24 - NO 2 - MARCH 2016



PERCUSSIONAIRE®
CORPORATION

130 McChee Road, Suite 109, Sandpoint ID 83864

percussionaire.com

208.263.2549