

EDITORIAL

Respiratory physiotherapy to prevent infections

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Abstract

Respiratory infections in ventilated patients are serious complications which lead to an increase in ventilator days, a longer length of stay on the ICU and an increase in mortality,^[1] and therefore we should welcome each initiative to diminish these complications. Spapen et al. suggest in this issue that a special form of respiratory therapy, the combination of intrapulmonary percussive ventilation (IPV) with assisted autogenic drainage physiotherapy (AADP) tends to decrease the occurrence of ventilator-associated Gram-negative infections.^[2] However, this study is small and underpowered and the study population is unbalanced, which makes it difficult to assess the value of this pilot. A much larger study would be required to be able to draw any definite conclusions. In addition, there are several other problems with this pilot study, a number of which are neatly addressed by the authors.

So far there is hardly any evidence for the usefulness of respiratory physiotherapy in the prevention of ventilator-associated pneumonia (VAP).^[3] The authors therefore undertook a challenging task by investigating a special form of physiotherapy. As the endpoint in their study they choose the occurrence of infection-related ventilator-associated complications (IVAC) rather than more solid endpoints as ventilator days or length of stay in the ICU. Because non-infectious problems can give similar symptoms to VAP, the diagnosis is challenging and subject to considerable inter-observer variability. Moreover, the microbiology cultures yield a low accuracy as diagnostic tool and tend to be slow.^[1] Waiting for test results may cause a delay in treatment. To overcome these difficulties the Centers for Disease Control and Prevention (CDC) recently introduced a new concept: ventilator-associated events (VAE), a tiered approach as an objective surveillance measure to improve the accuracy of diagnosing ventilator-related complications. To even further improve the objectivity and reproducibility, the CDC recently proposed alternative

definitions for VAE including IVAC.^[1] These definitions focus on worsening oxygenation and systemic signs of infection and exclude the use of chest radiography.

Unfortunately the utility of VAE and IVAC to identify all patients with pneumonia, the ability to prevent VAE and the role of VAEs in clinical practice remain uncertain.^[4,5] One could argue that a study aimed at reducing infectious complications in ventilated patients with a form of therapy of which the usefulness is still very much in doubt should therefore rather aim for more solid endpoints than VAEs.

Another concern is the reproducibility of the results in the Dutch setting. In a recent electronic surveillance study for VAE in 2080 patients in the Netherlands, an incidence of IVAC of only 3.1% was reported. Although the study included patients with a length of stay of more than two days instead of three days, as in the study by Spapen, the difference in the reported incidence of IVAC in Spapen's study (13% in the treatment group and 47% for both control groups) is striking. It is probable that the lower incidence of IVAC can be attributed to the use of selective decontamination of the digestive tract (SDD). As SDD is used widely in Dutch ICUs one wonders whether the results of AADP can be reproduced in ICUs in the Netherlands.

Finally, all patients in the treatment group were given IPV-AADP twice daily for 20 minutes by dedicated respiratory therapists, adding up to 40 minutes for each patient. In our ICU nursing staff, physiotherapists and beds are scarce. We would consider it very luxurious indeed if we had the availability of trained physiotherapists who could spend 40 minutes a day with each ventilated patient in our ICU. If we had such manpower in our department, where all patients are treated with SDD, we would likely devote that to mobilisation and physical rehabilitation.

Disclosures

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