

Shortened antibiotic treatment for ventilator-associated pneumonia in ICU patients just as effective as standard course

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Less is also better—that is what researchers have found while conducting a tri-nation clinical trial to see if shorter courses of antibiotics are as

effective as longer prescriptions of the drug to treat ventilator-associated pneumonia.

The research is [published](#) in *The Lancet Respiratory Medicine* journal.

The four-year long REducing Antibiotic tReatment Duration for Ventilator-Associated Pneumonia (REGARD-VAP) study involved 460 patients in 39 hospital intensive care units in Nepal, Thailand and Singapore. While personalized short-course treatment duration for patients with ventilator-associated [pneumonia](#) (VAP) was just as effective in reducing the duration of pneumonia in comparison to the standard treatment duration, the short-course treatment strategy also successfully reduced antibiotic side effects from 38% to 8%.

VAP is a common lung infection among [critically ill patients](#) in hospital intensive care units, who are dependent on ventilators to breathe. It occurs when bacteria invade the [lower respiratory tract](#) and thin lung tissues via the breathing tube. The infection leads to longer hospital stays, increased [antibiotic use](#), and the risk of death is as much as 40%. The study's findings serve as a point of reference for antibiotic usage reduction and titration, so that the onset of antibiotic resistance can be prevented.

The study's author and [infectious diseases](#) physician Dr. Mo Yin from the Infectious Diseases Translational Research Programme at the Yong Loo Lin School of Medicine (NUS Medicine) and Consultant from the Division of Infectious Diseases in the Department of Medicine at National University Hospital (NUH) said, "Antibiotics are the default treatment used for patients with ventilator-associated pneumonia, which is the commonest hospital-acquired infection in the intensive care units.

"However, antibiotics when used indiscriminately in large amounts will make antibiotics less effective over time and increase bacteria's

resistance to antibiotics. This [clinical study](#) shows that the duration and the strategy of antibiotic treatment can be tailored based on how the patient responds to treatment and is feasible enough to be adopted even in settings with limited resources, coupled with constant evaluation by attending physicians."

The 460 patients with VAP were randomly assigned into two groups—a three-to-five day individualized, short-course antibiotic treatment plan, and a longer, standard-of-course treatment plan of a minimum eight days. The main aim was to determine if the individualized short-course strategy is non-inferior to the usual standard-of-care duration, in terms of the increased risk of death or the recurrence of pneumonia happening within 60 days of enrolling into the study. Of the 460 participants, 41% in the individualized short-course group and 44% in the standard-of-care group either died or had pneumonia recurrence.

Participants were reviewed daily to assess if they met the criteria to stop antibiotics; the criteria included a core body temperature of less than or equal to 38.3 degrees Celsius for 48 hours and stable blood pressure. When the criteria were met, all participants in the short-course treatment strategy group were weaned off antibiotics after three to five days of receiving VAP treatment.

For patients in the standard care duration group, the antibiotic treatment strategy lasted at least eight days, as determined by their primary physicians. Current standard-of-care antibiotic treatment can last up to two to three weeks, accompanied by higher risks of side effects and unnecessary economic costs.

More information: Yin Mo et al, Individualised, short-course antibiotic treatment versus usual long-course treatment for ventilator-associated pneumonia (REGARD-VAP): a multicentre, individually randomised, open-label, non-inferiority trial, *The Lancet Respiratory*

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