

# Fewer deaths with preventive antibiotic use

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Administering antibiotics as a preventive measure to patients in intensive care units (ICUs) increases their chances of survival. This has emerged from a study involving nearly six thousand Dutch patients in thirteen hospitals. Researchers at University Medical Center (UMC) Utrecht have published their findings in an article in *The New England Journal of Medicine*.

During the study, a team of researchers compared the effect of two kinds of antibiotic treatments with the standard ICU care. They divided into three groups nearly six thousand patients hospitalized in ICUs between 2004 and 2006. The patients in question were expected to be on a ventilator for at least two days and/or to be admitted to the ICU for at least three days. One of the groups received an oral antibiotic paste four times a day. The second group, in addition to being given the oral paste four times daily, received antibiotics through a gastric tube in the intestinal tract and by intravenous drip. The third group was the control group and received the standard ICU care.

After four weeks, fewer people had died in the groups that received antibiotics than in the control group. Preventive use of antibiotics reduced the number of deaths by 3.5 percent (oral antibiotic paste, and antibiotics in the intestinal tract and by intravenous drip) and 2.9 percent (oral antibiotic paste). The difference between the two groups treated with antibiotics was not significant. The number of antibiotic-resistant bacteria did not increase in these patients. Although the patients in the control group were in general slightly less sick, the statistical data were adjusted to reflect this.

The findings have settled a long-running debate on whether the advantages of using antibiotics as a preventive measure offset the drawback of the possibility of developing antibiotic resistance. For Dr. Anne Marie de Smet, anesthesiologist-intensivist at UMC Utrecht and the article's first author, the conclusion is clear.

In the Netherlands, every year more than 18,000 patients are hospitalized in ICUs for more than three days. "I believe we should revise the antibiotic policy for the ICU," says De Smet. "Because the study was conducted in thirteen Dutch hospitals, the conclusions can be implemented throughout the country. We have seen that using antibiotics clearly results in a reduction in the number of deaths, and ICUs should make use of this knowledge." The study was too short to be able to provide any insight into how resistance develops in the long term, and this will require further research.

Source: University Medical Center Utrecht

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