Prophylactic antibacterials for the prevention of VAP?

The use of antibacterial agentss, including aminoglycosides, third-generation cephalosporins or β-lactams/β-lactamase inhibitors, within the first 48 hours of stay in the intensive-care unit (ICU) may reduce the risk of early-onset ventilator-associated pneumonia* (VAP), suggest researchers from France. [1]

The 3-year study was conducted in medical and surgical ICUs of five university-affiliated hospitals in France. The study included 747 patients (mean age 68 years) who required mechanical ventilation for ≥ 48 hours. A first episode of VAP was observed in 158 patients (21%), and 80 of these episodes were defined as early-onset VAP. Multivariate analysis showed that the use of third-generation cephalosporins, aminoglycosides or β-lactams/β- lactamase inhibitors within 48 hours of ICU admission was associated with a decreased risk of early-onset VAP (odds ratio [OR] 0.33, 0.36 and 0.47, respectively). In contrast, the use of sucralfate for stress ulcer prophylaxis in the first 48 hours of ICU stay was an independent risk factor for early-onset VAP (OR 1.81). Other independent risk factors were unplanned extubation during the first 48 hours of ICU stay, male gender, sedation as indicated by a Glasgow Coma Scale score of 6–13 on admission and the LOD** score on day 1 (OR 3.19, 2.06, 1.95 and 1.12, respectively).

In an accompanying editorial, intensive-care specialists from Spain comment that the researchers "*do not provide convincing arguments in favor of use of antibiotics as systemic prophylaxis or preemptive therapy*". [2] The specialists explain that using antibacterials to prevent early-onset VAP may increase the risk of late-onset VAP due to multiresistant bacteria. "*We cannot recommend prophylactic administration of antibiotics for all patients during the first days of mechanical ventilation*", they conclude.

* VAP was defined as being of early onset when it occurred between days 3 and 7 of mechanical ventilation.

** logistic organ dysfunction

1. Bornstain C, et al. Sedation, sucralfate, and antibiotic use are potential means for protection against early-onset ventilator-associated pneumonia. Clinical Infectious Diseases 38: 1401-1408, No. 10, 15 May 2004.
2. Diaz E, et al. Antibiotic use and the risk of pneumonia: 20 years of studies, but where are we now? Clinical Infectious Diseases 38: 1409-1411, No. 10, 15 May 2004.