

mately 1 in 10^6 bacteria, may end up in the air again after collection on a respirator. Based on these experiments with *M tuberculosis* surrogate bacteria, we conclude that *M tuberculosis* is unlikely ever to become an infectious problem in the air again, once it is removed by a respirator.

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Ventilator-Associated Pneumonia: Role of Anaerobes

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Aspiration of oropharyngeal material, with its high concentration of anaerobic bacteria, has been implicated in the pathogenesis of both ventilator-associated pneumonia (VAP) and aspiration pneumonitis (AP). Consequently, patients with these disorders usually are treated with antimicrobial agents with anaerobic activity. Malik and coworkers from St Vincent Hospital, Worcester, Massachusetts, conducted a study to determine the incidence of anaerobic bacteria in patients with VAP and AP. Sequential blind protected-specimen brush (PSB) sampling was conducted in 143 patients with 185 episodes of suspected VAP and 25 patients with AP who required mechanical ventilation. Quantitative aerobic and anaerobic cultures were performed on all

specimens.

Using predefined criteria, bacterial pneumonia was diagnosed in 63 of 185 suspected VAP episodes (34%) and 12 of 25 patients with AP (48%). At least one dose of an antibiotic was given in the 24 hours prior to bacteriologic sampling in 106 suspected VAP episodes (57%) and in 12 patients with AP (48%). More than one pathogen was isolated from 11 VAP and 4 AP patients. *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and enteric gram-negative organisms were isolated most frequently from patients with VAP. In the patients with AP, enteric gram-negative organisms were isolated in patients with gastrointestinal disorders, and *Streptococcus pneumoniae* and *Haemophilus influenzae* predominated in patients with community-acquired aspiration.

Only one anaerobic organism was isolated from the entire group of patients; *Veillonella parvula* was iso-

lated from a blind PSB specimen in a patient with suspected aspiration pneumonia.

The authors conclude that, despite painstaking efforts, they were able to isolate only one non-pathogenic anaerobic organism from this group of patients. The spectrum of aerobes in patients with VAP was similar to that reported in the literature. The organisms found in patients with AP was a reflection of the organisms likely to colonize the oropharynx. The use of antibiotics with anaerobic coverage may not be necessary in patients with suspected VAP and AP. Furthermore, penicillin G and clindamycin may not be the antibiotics of choice in patients with AP.

FROM: Marik PE, Careau P. The role of anaerobes in patients with ventilator-associated pneumonia and aspiration pneumonia: a prospective study. *Chest* 1999;115:178-183.