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### **A Comparison of Culture-Positive and Culture-Negative Health-Care-Associated Pneumonia.**

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**OBJECTIVE:** The aim of this study is to describe the initial antibiotic treatment regimens, severity of illness, and in-hospital mortality among culture-negative and culture-positive patients with health-care-associated pneumonia (HCAP).

**METHODS:** We used a retrospective cohort study, examining adult patients with HCAP from Barnes-Jewish Hospital, a 1,200-bed urban teaching hospital.

**RESULTS:** Eight hundred seventy patients with HCAP were identified over a 3-year period (January 2003 through December 2005) of whom 431 (49.5%) were culture-positive. Among the non-culture-positive patients, 290 (66.1%) had no respiratory cultures obtained, and 149 (33.9%) had no growth or nonpathogenic oral flora identified and were classified as culture-negative. Culture-negative patients were more likely to have received an initial antibiotic regimen (ceftriaxone +/- azithromycin or moxifloxacin) targeting community-acquired pneumonia pathogens compared with culture-positive patients (71.8% vs 25.5%,  $P < .001$ ). Severity of illness as assessed by ICU admission and mechanical ventilation (MV) was statistically lower in culture-negative compared with culture-positive patients (ICU admittance 12.1% vs 48.7%,  $P < .001$ ; MV: 6.7% vs 44.5%,  $P < .001$ ). In-hospital mortality and hospital length of stay were also statistically lower for culture-negative patients (mortality: 7.4% vs 24.6%,  $P < .001$ ; hospital length of stay: 6.7 +/- 7.4 days vs 12.1 +/- 11.7 days,  $P < .001$ ).

**CONCLUSIONS:** In this analysis, patients with culture-negative HCAP had lower severity of illness, hospital mortality, and hospital length of stay compared with culture-positive patients. These data suggest that patients with culture-negative HCAP differ substantially from patients with HCAP with positive microbiologic cultures.

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