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Mechanically Ventilated Patients With MRSA Pneumonia

From 1990 to 1994, Pujol and colleagues from the University of Barcelona, Spain, conducted a prospective cohort study to define the clinical and epidemiological characteristics of ventilator-associated methicillin-resistant *Staphylococcus aureus* (MRSA) pneumonia acquired during a large-scale outbreak of MRSA infection. Of 2,411 mechanically ventilated patients, 347 (14.4%) acquired MRSA, 220 (63.4%) had MRSA-positive respiratory tract samples, and 41 (18.6%) developed ventilator-associated MRSA pneumonia. The overall attack rate for ventilator-associated MRSA pneumonia was 1.56 episodes per 1,000 ventilator

days, but annual attack rates varied according to the trend of the outbreak (range, 4.9-0.2).

In comparison with methicillin-sensitive *S aureus* (MSSA), which was implicated in 98 episodes of ventilator-associated pneumonia, MRSA caused exclusively late-onset ventilator-associated pneumonia, while MSSA caused both early-onset (55 [56.1%] of 98 episodes) and late-onset (43 [43.8%] of 98 episodes) ventilator-associated pneumonia. Logistic regression analysis of all patients with *S aureus* pneumonia revealed intubation for more than 3 days (odds ratio [OR], 1.11; CI₉₅, 1.03-1.18) and prior bronchoscopy (OR, 5.8; CI₉₅, 1.85-18.19) to

be independent variables associated with MRSA pneumonia.

The results indicate that MRSA ventilator-associated pneumonia is a frequent complication in intensive-care patients, manifesting itself as late-onset pneumonia in patients who have been intubated for prolonged periods or have undergone previous bronchoscopy.

FROM: Pujol M, Corbella X, Pena C, Pallares R, Dorca J, Verdaguier R, et al. Clinical and epidemiological findings in mechanically-ventilated patients with methicillin-resistant *Staphylococcus aureus* pneumonia. *Eur J Clin Microbiol Infect Dis* 1998;17:622-628.

Risk of Local Reactions Associated With Pneumococcal Re-vaccination

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Re-vaccination of healthy adults with pneumococcal polysaccharide vaccine (PPV) within several years of first vaccination has been associated with a higher-than-expected frequency and severity of local injection-site reactions. The risk of adverse events associated with re-vaccination of elderly and chronically ill persons 5 or more years after first vaccination, as is recommended currently, has not been well defined. Jackson and colleagues conducted a comparative intervention study to determine whether revaccination with PPV at least 5 years after first vaccination is associated with more frequent or

more serious adverse events than those following first vaccination.

The study period was April 1996 to August 1997 and included persons aged 50 to 74 years who had never been vaccinated with PPV (n=901) or who had been vaccinated once at least 5 years prior to enrollment (n=513).

Those who were re-vaccinated were more likely than those who received their first vaccinations to report a local injection-site reaction of at least 10.2 cm (4 in) in diameter within 2 days of vaccination: 11% (55/513) vs 3% (29/901; relative risk [RR], 3.3; CI₉₅, 2.1-5.1). These reactions resolved by a median of 3 days following vaccination. The highest rate was among re-vaccinated patients who were immunocompetent and did not have chronic illness: 15% (33/228)

compared with 3% (10/337) among comparable patients receiving their first vaccinations (RR, 4.9; CI₉₅, 2.4-9.7). The risk of these local reactions was significantly correlated with pre-vaccination geometric mean antibody concentrations.

The researchers note that physicians and patients should be aware that self-limited local injection-site reactions occur more frequently following re-vaccination compared with first vaccination; however, this does not represent a contraindication to revaccination with PPV for recommended groups.

FROM: Jackson IA, Benson P, Sneller VP, Butler JC, Thompson RS, Chen RT, et al. Safety of revaccination with pneumococcal polysaccharide vaccine. *JAMA* 1999;281:243-248.