Letters to the Editor

Potential Consequences of Using Aplisol Tuberculin Tests in Prior Epidemic Investigations

To the Editor:

Several reports, including one by Shands et al *(Infect Control Hosp Epidemiol* 1994;15:758-760), indicate an apparent widespread high false-positive rate associated with the use of Aplisol (Parke-Davis) tuberculin material.lj[2] Numerous other reports indicate that this problem is not recent.[2-5] To date, investigators have emphasized the cost and increased frequency of false-positive rates obtained during routine surveillance in healthcam workers (HCW). A second possible consequence of the high false-positive rate observed with Aplisol is an erroneously high rate of conversions observed during outbreak investigations.

I did a MEDLINE search of published reports from 1990 through 1994 using two separate word combinations: tuberculosis and healthcare worker, and tuberculosis and hospital. Ten articles reporting on TB outbreaks in the United States that involved tuberculin testing of HCW were identified.[6-16] None of these 10 articles reported the brand of tuberculin material, or PPD, that was used in their investigations.

Two other epidemics that were identified, one involving school children in St. Louis, Missouri, and the other involving an epidemic in a prison in Upstate New York, also failed to report the tuberculin brand that was used in the investigation.[17,18]

The findings of this survey do not allow one to conclude whether recent outbreaks have used Aplisol, and therefore, whether the reported rate of conversion or tuberculin positivity may be erroneously high. Although it is unlikely that the conclusion of any controlled analyses would be altered, the rates of conversion and infection may be falsely elevated if Aplisol was used. Studies that used Aplisol should be interpreted cautiously, especially if the rate of infection appeared unusually excessive.

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The above letter was shown to Dr. Shands, who declined to offer a reply.

Postexposure Varicella Management of Nonimmune Personnel

To the Editor:

I have a different reply to Ms. Haiduven et al (1994;15:329-334 and 1994;15:740-741) regarding postexposure varicella management of nonimmune personnel than Dr. O'Rourke's reply. It concerns statements about the wearing of masks for prolonged periods of time either by personnel who are susceptible and have been exposed to varicella or by patients with transmissible airborne infections.

When one wears a nonocclusive surgical mask for any length of time, the positive pressure created simply by breathing can disperse small particulate matter with some force to the outside of the mask into the air. Not only is this common sense, but it was described nicely with appropriate illustrations by Noffsinger MA and Halpern AA in "The OR Mask: What Protection Does It Afford?" *(Infections in Surgery.* 1990;9:17-20).

We have stopped the practice of letting patients wear masks for any reason for prolonged periods of time. They may wear masks while being

transported to an area for a test or procedure, but once at their destination, patients are placed in an appropriately ventilated room if the organisms are airborne, such as the varicella zoster *virus* or *Mycobacterium tuberculosis*. Personnel then wear appropriate protective masks or respirators. Some may say that having the patient wear a mask is better than nothing, but I disagree. It simply provides a false sense of security that can be dangerous to others who are susceptible or at risk from the patient's infection. Based on this belief alone, the approach suggested by Haiduven et al is one we would not want to adopt.

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The authors reply.

Ms. Gurevich states, based on the belief that masks "provide a false sense of security," that she would not want to adopt the approach described in our article.

First of all, our article does not advocate the prolonged masking of patients. We do not mask patients for prolonged periods, but do mask them while they are transported to an area for a test or procedure or to an outside area for a family visit. However, we also would add that we believe that a mask is better than nothing. A barrier that can afford some degree of protection is certainly better than leaving it off to avoid a "false sense of security," thereby foregoing any protection. Even the article by Hoffsinger and Halpern, cited by Ms. Gurevich, illustrates in one of its tables that wearing no mask resulted in a considerably larger average colony count per plate than wearing any of the three masks studied. We therefore should agree to disagree on this point. Ms. Gurevich does not address the main emphasis of our approach, and we would like to briefly reiterate our policy:

- We do not allow employees with clinical varicella infection to work.
- In addition, exposed employees who may be incubating the disease are screened for symptoms and sent home should they feel ill for any reason.
- The employees are instructed to change their masks every hour and whenever moist, thus not allowing them to wear the *same* mask for long periods.
- The approach has been described as "an alternative one." Employees have the choice to stay home; they rarely do so. Ms. Gurevich does not state her alternative to our policy.

We hope that the readers who work in institutions with large numbers of varicella exposures or large numbers of nonimmune personnel or both will appreciate the approach we describe. It has been an effective alternative at our institution. The problem with current Centers for Disease Control recommendations is that many staff would be sent home for many days postexposure and yet not develop chickenpox, an approach that is neither practical nor cost-effective.

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Risk of Ventilator-Associated Pneumonia May Be Reduced with Continuous Aspiration of Secretions

by Gina Pugliese, RN, MS
Medical News Editor

Ventilator-associated pneumonia commonly occurs as a result of aspiration of colonized secretions, despite the presence of an endotracheal cuff. Dr. J. Valles and colleagues in Barcelona, Spain, evaluated the effect of continuous aspiration of subglottic secretions in patients in a medical-surgical intensive care unit who required more than 3 days of intubation. In a randomized trial, study patients were intubated with an endotracheal tube that had a large opening on the dorsal side of the tube, just above the tracheal cuff, to allow for continuous aspiration. The cuff pressure was maintained at approximately 22 mm Hg, and all patients received sucralfate. In addition to clinical and radiographic findings, a diagnosis of pneumonia was based on the results of quantitative cultures of bronchial brush catheters and bronchoalveolar lavage.

Fourteen (18.4%) of 76 case-patients who received continuous aspiration developed pneumonia, compared to 25 (32.5%) of 77 control patients. The incidence of ventilator-associated pneumonia was 19.1 per 1,000 ventilator days in cases, compared to 39.6 per 1,000 days in the control group. Further, the onset of pneumonia was later in the continuously aspirated group compared to controls (12.0 days versus 5.9 days; P<.OO1). Only three episodes of pneumonia occurred during the first week in the cases, compared to 21 episodes of pneumonia in controls (P<.001). There also was a significant reduction in the incidence of pneumonia caused by gram-positive organisms in the continuously aspirated group, but no difference in pneumonia caused by gram-negative aerobic bacilli.

The author concluded that a simple modification in the endotracheal tube to allow continuous aspiration of secretions in mechanically ventilated patients may reduce the risk of pneumonia caused by gram-positive cocci and *Haemophilus influenzae;* the use of sucralfate also may play a role. It is unclear why there was not a significant difference in the risk of pneumonia due to gram-negative aerobic bacilli.

FROM: Valles J, et al. Continuous aspiration of subglottic secretions in preventing ventilator-associated pneumonia. *Ann Intern Med.* 1995;122:179-186.

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