Correspondence

The Editorial Board will be pleased to receive and consider for publication correspondence containing information of interest to physicians or commenting on issues of the day. Letters ordinarily should not exceed 600 words, and must be typewritten, double-spaced and submitted in duplicate (the original typescript and one copy). Authors will be given an opportunity to review any substantial editing or abridgement before publication.

Pneumococcal Pneumonia

TO THE EDITOR: I agree with Smith and Mann in their call in the January issue for accurate data on rates of pneumococcal disease in community hospitals. Unfortunately, their article offers no useful contribution in this regard. In addition to the problem of patient selection, which is inherent in a retrospective analysis (and acknowledged by the authors), the critical reader is faced with a thoroughly inadequate description of the bacteriologic technique used during the period in question. What are “standard culture techniques” as applied to the isolation and identification of Streptococcus pneumoniae? Perhaps the board-certified pathologist mentioned in the article is unaware of the voluminous literature attesting to the colossal variability in isolation rates, which are dependent on the methodology utilized. For example, what volume of blood was cultured, using what media and what method? Were selective solid media used and were the specimens incubated anaerobically? Were the plates examined with the use of a stereo microscope?

These and other questions should be answered by the authors in order to make their report evaluative and useful in any comparative analysis.

STANLEY C. DERESINSKI, MD
Redwood City, California

REFERENCE
1. Smith FE, Mann JM: Pneumococcal pneumonia: Experience in a community hospital. West J Med 1982 Jan; 136:1-5

TO THE EDITOR: Smith and Mann reported that pneumococcal pneumonia, particularly bacteremic pneumonia, was uncommon in their patient population in Los Alamos, New Mexico. Several of their methods and results warrant comment.

First, I would question the validity of the data used to conclude that a “reasonable attempt” had been made to establish etiology. Respiratory secretions were cultured in 185 of 230 episodes (80.4 percent). However, as noted by the authors, no quality control was exerted either prospectively or retrospectively. Thus, in addition to the fact that culture of sputum does not distinguish colonization from infection, the question of whether “sputum” specimens were truly representative of lower respiratory tract secretions cannot be resolved.

Second, definitive etiology can be established by culture of blood or lung aspirate. But blood cultures were done in only 95 of 230 patients (41.3 percent). No information is provided as to number of sets of cultures per patient. Since the bacteremia associated with pneumococcal pneumonia is not continuous, the number of times a blood culture is obtained will greatly influence the ability to detect its presence. Lung aspirate was obtained in only one instance.

Third, although review of outpatient use of antibiotics is mentioned in the methods, no data are provided in the results. Since the pneumococcus remains susceptible to most antibiotics that are prescribed in the outpatient setting, it is essential to know how often these drugs may have impaired the ability to detect the pathogen. A more favorable yield can be obtained by using an antimicrobial removal device, but this was not commercially available during the time of the study.

Fourth, the authors seem to conclude that pneumococcal pneumonia is uncommon in their community because of their geography—that is, rural rather than urban. I think a much more important aspect is the character of their patient population. A significant fraction of their community includes workers who are presumably healthy but seek acute medical care in Los Alamos. No data are provided about age distribution or underlying illnesses characteristic of the 17,000 to 25,000 people served by the hospital. In a recently reported retrospective review of bacteremic pneumococcal disease, nature of the place of residence was irrelevant. There are many rural towns in western New York, and 60 percent of our patients come from such communities. The type of patient
CORRESPONDENCE

served by a Veterans Administration Medical Center is the key determinant of our infection rate not the place of residence.

Fifth, in data presented by the authors, 25 patients had pneumococcal pneumonia, 11 of whom had blood cultures obtained; one was bacteremic. There is no statistically significant difference between this rate (9 percent) and the commonly reported 20 percent to 30 percent. In fact, if all other previously noted variables that may have produced negative cultures are considered, the positive yield of 9 percent seems quite consistent with expectations. But any conclusion extrapolated from these data is hazardous because of the small sample size.

Finally, readers should not conclude that this study supports the contention that pneumococcal pneumonia is restricted to urban or university hospitals. A larger, prospective study, as suggested by Smith and Mann, is needed. Both retrospective and prospective studies are ongoing at the Buffalo Veterans Administration Medical Center to determine incidence of disease among our patients. Data should also be obtained from other types of institutions before any conclusions can be drawn.

Vaccine efficacy and cost-effectiveness is also under evaluation in a double-blind, prospective, placebo-controlled trial at the Buffalo VA Medical Center. Although the recommendations for widespread vaccination have been questioned, the report of Drs. Smith and Mann should not be used to discourage vaccination of high-risk persons in the rural setting.

THOMAS R. BEAM, JR, MD
Chief, Infectious Diseases
Veterans Administration Medical Center
Buffalo

REFERENCES

1. Smith FE, Mann JM: Pneumococcal pneumonia: Experience in a community hospital. West J Med 1982 Jan; 136:1-5
2. Sanford JP, Pierce AK: Lower respiratory tract infections, In Bennett JV, Brachman PS (Eds): Hospital Infections. Boston, Little, Brown and Co, 1979, pp 255-286
3. Mylotte JM, Beam TR Jr: Comparison of community-acquired and nosocomial pneumococcal bacteremia. Am Rev Respir Dis 1981; 123:265-268
4. Hirschmann JV, Lipsky BA: Pneumococcal vaccine in the United States—A critical appraisal. JAMA 1981 Sep 25; 246: 1428-1432

The Authors Reply

TO THE EDITOR: We would like to submit the following in response to the letters of Dr. Deresinski and Dr. Beam. Dr. Deresinski raises a question, which we well recognized, concerning the variability of isolation rates of Streptococcus pneumoniae, and Dr. Beam is concerned about the adequacy of pretreatment cultures. In all patients, blood specimens were obtained from two different sites and were taken one hour apart. Each specimen was inoculated into aerobic and anaerobic culture media. Some patients had additional cultures, but in a patient severely ill in the judgment of his attending physician, antibiotics were not withheld to obtain numerous sets of cultures. Once obtained, blood specimens are inoculated with 10 ml of blood into 100 ml of broth. Aerobic bottles contain tryptic soy broth and srs (sulfite polymyxin sulfadiazine), and anaerobic bottles contain Columbia broth, srs and sucrose. They are incubated in carbon dioxide. Blood cultures are routinely subcultured to chocolate agar plates at 24 and 72 hours, and culture bottles are incubated and examined for one week. Sputum specimens for culture were routinely inoculated on blood agar plates, chocolate agar plates and MacConkey agar plates.

Obtaining lung aspirate specimens is not practical in most community hospital settings, including ours, since even most board-certified, recently trained internists are not trained in this technique.

Patients who had been treated with antibiotics as outpatients were excluded from this study; most of these were less than 5 years old and were also excluded because of inadequate culture data.

Dr. Beam also raises a question about the Los Alamos population. The area served by Los Alamos Medical Center has a fairly standard population distribution for New Mexico: approximately 9 percent younger than 5 years old, 36 percent ages 5 to 19, 32 percent ages 20 to 44, 18 percent ages 45 to 64 and 5 percent older than 65. Chronic illnesses, for which most people are also treated at Los Alamos Medical Center, follow no unusual patterns. Our report included information on underlying diseases in patients with pneumococcal and nonpneumococcal pneumonia, and there were no substantial differences.

Dr. Deresinski commented on the variability in isolation rates of S pneumoniae. The difficulty of isolating S pneumoniae occurs in university and inner-city hospitals as well as in community hospitals. It seems unlikely, therefore, that the difficulty in isolation of pneumococcus is totally responsible for the lower incidence of bacteremic pneumococcal pneumonia in our community hospital.

It is very important to understand that we do not “contend,” as suggested by Dr. Beam, that pneumococcal pneumonia is restricted to urban