The higher incidence of Gram-negative organisms (10 percent) in Singapore is interesting. We have previously found a high prevalence of Gram-negative organisms in the lungs of patients with bronchiectasis. Is it possible that the relatively high incidence of Gram-negative organisms in the Singapore study may be due to acute pneumonic exacerbations in patients with bronchiectasis? If so, costly antibiotics directed at Gram-negative organisms should then be reserved for patients with acute pneumonia who also have evidence of coexisting bronchiectasis. We are against the use of extended antibiotic coverage for community-acquired pneumonia in the absence of other coexisting lung diseases.

In conclusion, we are encouraged by the study by Dr. Hui and colleagues supports our main findings in community-acquired pneumonia in the Far East. The differences are interesting but seem to be minor. We look forward to reading their report in full.

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REFERENCE


Fatal Diffuse Alveolar Injury Following Use of Intrapleural Bleomycin

To the Editor:

Bleomycin is an agent commonly used to cause pleurodesis as treatment for malignant and nonmalignant pleural effusions. Serious side effects have been described following systemic, but not intrapleural, administration. We present a case of fatal diffuse alveolar injury following its use for the induction of pleurodesis as therapy for a nonmalignant pleural effusion.

A 62-year-old woman with chronic renal failure developed a symptomatic right pleural effusion, which persisted despite hemofiltration and multiple thoracenteses. She was admitted for elective chemical pleurodesis. Her initial chest radiograph confirmed the presence of a large right pleural effusion. Significant laboratory data included the following: blood urea nitrogen, 35 mg/dl; serum creatinine, 10.1 mg/dl; hemoglobin, 6.5 g/dl.

A 38F chest tube was placed in the right pleural space, draining 1,500 ml of clear yellow exudate (total protein, 5.4 g/100 ml; WBC, 280/ml; lactate dehydrogenase (LDH), 634 IU/L; fluid-serum LDH ratio, 3.1; fluid-serum protein ratio, 0.7). After 36 h of drainage, pleurodesis was attempted on each of 2 successive days with 60 units of bleomycin, using a previously described protocol. Twelve hours after the second instillation, the patient developed a fever of 38.7°C and leukocytosis (WBC, 10,600/ml). Sputum and pleural fluid Gram stains showed no bacteria. Urine and blood cultures drawn then and subsequently were sterile.

Over the next 7 days, the patient became progressively hypoxic, ultimately requiring endotracheal intubation and mechanical ventilation. A diagnosis of diffuse alveolar injury was made on the basis of decreasing lung compliance, an increasing alveolar-arterial oxygen pressure gradient, and worsening bilateral diffuse alveolar infiltrates on chest radiographs despite continued aggressive diuresis. Doppler ultrasonography of both lower extremities revealed no evidence for deep venous thrombosis. Serologic examination for anti-nuclear and anti-basement membrane antibodies and Legionella titers were all negative. Methylprednisolone for possible hypersensitivity pneumonitis and empiric broad-spectrum antibiotics were used; both modes of treatment were ineffective. The patient died on day 14 of her hospital stay. Her family did not consent to autopsy.

The association of intravenous bleomycin and acute respiratory distress syndrome is well documented. Although applied "topically" within the pleural cavity, up to 45 percent is absorbed systematically. Furthermore, being principally cleared by the renal route, its half-life is prolonged by decreased creatinine clearance. Our patient's renal failure increased its half-life and may have potentiated its toxicity, although the total dose instilled was corrected as recommended for renal failure. Other potential causes of lung injury, such as pulmonary emboli, drug reaction, infections, and autoimmune diseases, were excluded after extensive diagnostic studies. Bleomycin should be used with caution as a pleural sclerosing agent in patients with underlying renal disease.

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Thrombolytic Therapy for Pulmonary Embolism

To the Editor:

I read with interest the supplement to the April 1992 issue of Chest, in which the tone advocates the use of thrombolytic therapy for the treatment of pulmonary embolism. However, after 25 years of study, the major fundamental question has yet to be answered: does thrombolytic therapy decrease morbidity and/or mortality compared with heparin therapy in the management of pulmonary embolism? The Urokinase Pulmonary Embo1ism Trial of the 1970s does not support this. This study showed that although there was initially a more rapid rate of thrombus resolution, the degree of resolution was the same within 2 weeks, and thrombolytic therapy offered no mortality reduction. Recently, Dr. Goldhaber cited an abstract of data on 23 patients as evidence that thrombolytic therapy reduces morbidity, but an issue this important demands a more solid answer than these data provide. There is evidence that thrombolytic therapy improves right-sided hemodynamics, but it would be unwise to extrapolate this to mean clinical benefit for the patient.

Until thrombolytic therapy has been shown to offer true benefit
in terms of reduction of morbidity and/or mortality, the administration of heparin alone, followed by coumadin, should continue to be considered the standard of care and should be the therapy in the vast majority of cases of pulmonary embolism. Aside from perhaps use in patients dying of the obstructive effects of the acute embolism, the role of thrombolytic therapy in the treatment of pulmonary embolism has yet to be defined.

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Selecting Bronchial Intubation for the Treatment of Bronchopleural Fistula in a Preterm Newborn

To the Editor:

A left-sided tension pneumothorax occurred in a 1-day-old premature newborn with transient tachypnea. Closed chest-tube drainage was started. A second chest tube was inserted at the age of 36 h because of incomplete resolution of the pneumothorax. A tension pneumothorax persisted with a flow of 200 ml/min through the bronchopleural fistula. Different modes of ventilation (high flow, short inspiratory time), different forces of suctioning (up to 20 cm H2O), and positioning the patient on the left side failed to improve the air leak or the patient's hypoxia. Selective intubation on the right was then performed with an endotracheal tube without a Murphy eye, and the chest-tube aspiration was increased to 25 cm H2O in an attempt to minimize atelectasis in the left lung (Fig 1). No further leak was observed.

Selective intubation has been used to treat severe unilateral pulmonary interstitial emphysema. Our limited experience suggests that this method may also be useful in treating severe bronchopleural fistula in premature infants.

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Microbial Etiology of Acute Pneumonia in Hospitalized Patients

To the Editor:

I read with great interest the article by Bates et al,1 which appeared in the April 1992 issue of Chest. Their results, which revealed a predominance of Legionella and other Gram-negative bacteria in hospitalized patients with acute pneumonia, are certainly worth discussing.

I was delighted to read that this study did not rely on results of sputum culture. There is abundant evidence in the literature showing that sputum culture results can be misleading in this setting.2-4 A study of community-acquired pneumonia (CAP) in Papua New Guinea in which I was involved supports this.4 In this study of 175 adults with CAP, a positive microbial diagnosis was made on the basis of positive cultures of blood and/or percutaneous lung aspirate (PLA) alone, although sputum cultures were also obtained whenever possible. Blood cultures were positive in 57 of 175 cases, (33 percent), and PLA cultures were positive in 90 of 144 cases (62.5 percent). Of the 112 patients with positive blood and/or PLA cultures, sputum was obtained for culture in 90. The same organism was isolated on sputum culture in only 26 percent of cases, while in 40 percent a different organism was grown on sputum culture, and in the remaining 34 percent sputum cultures were negative.

Bates et al note the marked difference in microbial etiology in their pneumonia patients compared with other studies where the more common respiratory pathogens predominate (ie, Streptococcus pneumoniae and Haemophilus influenzae). This difference is explained by the presence of oropharyngeal contamination when etiology is dependent on sputum culture results. They state that "until a larger number of patients are evaluated using invasive methods to obtain material for study, these contradictions will persist." However, our study in Papua New Guinea addresses this issue very clearly. Based on positive blood and/or PLA cultures only, the causative microbial organisms were as follows: S pneumoniae, 61 percent of cases; H influenzae, 13 percent; Staphylococcus aureus, 12 percent; and Gram-negative enteric bacilli, 12 percent. Clearly, in our study the common respiratory pathogens capable of both oropharyngeal contamination and true lower respiratory tract sepsis (ie, pneumococcus and H influenzae) accounted for the majority (74 percent) of cases of CAP.

The study by Bates et al clearly brings into question the validity of previous studies of pneumonia. Using more invasive methods of microbial diagnosis, they demonstrated a predominance of Legion-