


9 Corkery KJ, Luce JM, Montgomery AB. Aerosolized pentamidine for treatment and prophylaxis of Pneumocystis carinii pneumonia: an update. Respir Care 1988; 33:676-85

10 Awen CF, Baltzan MA. Systemic dissemination of Pneumocystis carinii pneumonia. CMAJ 1971; 104:809-12

11 Price RA, Hughes WT. Histopathology of Pneumocystis carinii infestation and infection in malignant disease in childhood. Human Pathol 1974; 5:737-52


Intensive Care for Patients with Pneumocystis carinii Pneumonia and Respiratory Failure Are We Prepared for Our New Success?

The approach toward intensive care for patients with the acquired immunodeficiency syndrome (AIDS) and respiratory failure caused by Pneumocystis carinii pneumonia (PCP) has changed over time. During the first phase of the AIDS epidemic (1981 to mid-1984), clinicians and patients lacked the data on which to base decisions regarding intubation, mechanical ventilation, and other procedures performed in the intensive care unit (ICU). All potentially life-extending treatments were pursued; thus, intensive care utilization and costs were high. In the second phase (mid-1984 to 1987), several series reported the outcome of ICU care for patients with AIDS, PCP, and respiratory failure. In response to the hospital survival rates of 0 to 15 percent reported in these series, patients and clinicians increasingly declined ICU care.7,8

In the past two years, a small number of reports have generated hope that the prognosis of AIDS patients with PCP and respiratory failure may be improving. Montaner et al10 and El-Sadr and Simberkoff11 reported hospital survival rates of 50 and 42 percent, respectively, in two cohorts of such patients. In reviewing our experience from 1986 to 1988 at San Francisco General Hospital, we also found an improved outcome, with a hospital survival rate of 40 percent after intubation for severe PCP.12 In this issue of Chest (see p 862), Friedman et al report the outcome of 33 patients with PCP and respiratory failure. They found a hospital survival rate of 36 percent, consistent with other recent optimistic studies. No clinical or demographic factors predicted survival, and the authors were unable to explain the improved outcome.

Given these new data, three important questions arise. First, is the prognosis of AIDS patients with PCP and respiratory failure really improving? Second, if so, what factors explain the better outcome? Third, what are the consequences of the new optimism surrounding intensive care for patients with PCP?

Given the possibility that new studies were being published primarily because they differed from earlier studies demonstrating a poor outcome (publication bias), we were initially skeptical of the reported improved outcomes for AIDS patients with PCP and respiratory failure.13 However, the consistent results of most recent studies provide convincing evidence of an improving short-term survival. It should be noted that, even in recent studies, the one-year survival rate in AIDS patients with severe PCP continues to be less
than 10 percent.10 Thus, long-term survival appears not to have changed.

To what can these improvements in short-term hospital survival be attributed? A number of explanations have been posited. Although it is possible that earlier diagnosis of PCP and use of intensive care are responsible for the improvement, no published evidence supports these hypotheses. Therapy for PCP, primarily trimethoprim-sulfamethoxazole and pentamidine, remains unchanged. In a number of recent studies, the adjuvant use of corticosteroids has been associated with a beneficial trend in hospital survival rates.10-12 However, in the absence of randomization, blinding, and adequate controls, we are unable to confirm the salutary effect of steroids, even though we often advocate their use in PCP and respiratory failure. Since many patients with PCP forgo life-sustaining treatments,14 selection of healthier patients for admission to the ICU is another possible explanation for the improved outcome. However, in our recent study, we found no evidence to support this hypothesis.13 Finally, a change in the virulence of the organism or the attributes of the host occurring over time may be operative, although here again the evidence is lacking.

The consequences of the improved outlook for respiratory failure due to PCP are far reaching for patients, clinicians, insurers, and policy makers. Until recently, decisions by informed AIDS patients to forgo life-sustaining treatments kept ICU utilization low and postponed consideration of difficult questions regarding ICU resource availability and distributive justice.15 As the prognosis improves, however, one would expect patients and clinicians to favor the use of intensive care in increasing numbers. For instance, ICU utilization for patients with PCP and respiratory failure increased fourfold at San Francisco General Hospital during the past two years (M.B. Russi and R.M. Wachter, unpublished data), presumably because clinicians and patients alike became aware of the improved prognosis for AIDS patients with severe PCP. Unless prophylactic therapy for PCP proves so efficacious and popular that this disease does not require intensive care, ICUs in areas where AIDS is prevalent may become filled with patients suffering from PCP. The cost of each hospitalization for PCP and respiratory failure treated with mechanical ventilation is approximately $35,000 (R.M. Wachter, unpublished data). Thus, the day of reckoning for the allocation of increasingly scarce resources may soon arrive.

The need for better data is obvious, and a prospective multicenter study to answer some of the questions regarding outcome and prognostic factors is underway. Until it is completed, we continue to agree with Friedman et al that informed, competent patients should be allowed to make their own choices regarding life-sustaining treatments, including intensive care for respiratory failure due to PCP, in consultation with clinicians.15 What to do if and when such choices cannot be honored because of constrained ICU bed or resource availability may prove to be one of the most difficult questions we face in caring for patients with AIDS.

Robert M. Wachter, M.D.; and John M. Luce, M.D., F.C.C.P.
San Francisco

Robert Wood Johnson Clinical Scholars Program, Stanford University, and the General Internal Medicine and Chest Divisions of the Department of Medicine, San Francisco General Hospital, and the University of California. Reprint requests: Dr. Wachter, Box 1505, University of California San Francisco, San Francisco 94143-1505

REFERENCES
6 Baggott LA, Baggott BB. Pneumocystis carinii pneumonia in AIDS patients in intensive care [Abstract]. Chest 1987; 92:133S
12 Wachter RM, Russi MB, Hopewell PC, Luce JM. The improving survival rate after intensive care for P. carinii pneumonia and respiratory failure [Abstract]. Fifth International Conference on AIDS, Montreal, Canada, 1989
15 Englehardt HT, Rie MA. Intensive care units, scarce resources, and conflicting principles of justice. JAMA 1986; 255:1159-64