

to suppress the cytokine storm, hoping that would stop the progression of pulmonary disease. And, in fact, in many cases, it did. Lung shadows started to resolve, and oxygenation improved after corticosteroid treatment. We must emphasize that corticosteroids were not used to treat ARDS. We are in the process of analyzing the clinical responses to these treatments and will make that information available as soon as possible.

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1. Poutanen SM, Low DE, Henry B, et al. Identification of severe acute respiratory syndrome in Canada. (Available at <http://www.nejm.org>.)

2. Tsang KW, Ho PL, Ooi GC, et al. A cluster of cases of severe acute respiratory syndrome in Hong Kong. (Available at <http://www.nejm.org>.)

## SARS in Northern Vietnam

**TO THE EDITOR:** The outbreak of a new, potentially severe, infectious disease, without known cause or treatment, is a stressful challenge, both for patients and for physicians. Our only therapeutic weapons may be individual protection by means of masks, glasses, gloves, smocks, or even suits designed like those that protect against nuclear, biologic, and chemical agents. We would like to summarize our experience with severe acute respiratory syndrome (SARS) in 39 patients in Vietnam.

The incubation period appeared to be about four or five days, after direct contact with a sick patient. In our experience, there did not seem to be any healthy carriers. During the initial phase, before the onset of the respiratory disease, the symptoms mimicked those of influenza. In all cases, the temperature was 38°C or higher. Anybody who has fever and has been in contact with a patient with SARS must be considered to be infected. In addition to fever, there were often diffuse myalgias and severe headache. The fatigue was constant.

After the index patient, all our infected patients were members of the hospital staff. Blood counts usually showed moderate neutropenia and thrombocytopenia. SARS was confirmed because of the epidemic context. Plain-film radiographs of the chest were normal initially but became abnormal three to five days later, with infiltrates visible in 90

percent of the cases and other changes visible in the remainder. Unilateral or bilateral peripheral or central interstitial infiltrates were diagnostic findings.

The subsequent evolution of the illness involved respiratory symptoms that were severe in some patients and moderate or mild in others. The cough was constant and dry, except when there was superinfection. Findings on auscultation were normal at the onset, but usually fine crackles could be heard in the lower lobes several days later. Dyspnea was seldom absent, and it occasionally became severe, leading to acute respiratory distress with hypoxemia and hypercapnia and requiring mechanical ventilation (in 15 percent of our patients). In the patients with severe dyspnea, plain-film radiographs of the chest showed major bilateral infiltrates. To date, 5 of our 39 patients have died of the acute respiratory distress syndrome, despite ventilation with the use of positive end-expiratory pressure; the rest appear to be recovering.

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## Pulmonary-Artery Catheters in High-Risk Surgical Patients

**TO THE EDITOR:** The study by Sandham et al. (Jan. 2 issue)<sup>1</sup> showed no improvement in outcome resulting from goal-directed therapy guided by pulmonary-artery catheter in high-risk surgical patients. The main targets (an oxygen-delivery index of 550

to 600 ml per minute per square meter of body-surface area and a cardiac index of 3.5 to 4.5 liters per minute per square meter) were reached by only about 20 percent of the patients preoperatively and by less than 80 percent during the postoperative pe-