To the Editor

Early Ribavirin Treatment Did Not Prevent Severe Disease in High-Risk Bronchopulmonary Dysplasia Patients With Respiratory Syncytial Virus Infection

We have cared for infants with severe bronchopulmonary dysplasia (BPD) at the Pulmonary Rehabilitation Center in Pulderbos, Belgium, since 1991. To prevent nosocomial infection in this residential setting, the children are cared for in small groups of two to six children. Hand washing and protective gowns are used to prevent cross-infection. During winter, respiratory syncytial virus (RSV) specimens (Abbott Testpack) are tested at weekly intervals on nasal wash samples of all patients. Patients are also tested whenever they have clinical signs suggesting a respiratory tract infection.

During the winter of 1993 to 1994, four BPD children became infected with RSV. They were cared for in two groups of two children each. Their ages were 10–25 months, body weights 5.3 –8.7 kg, birth weights 680–1,585 g, and gestational ages 24–32 weeks. Two of these patients were still on oxygen therapy (0.2 and 0.3 L/min) when their RSV test turned positive. All patients were treated with aerosolized ribavirin: 6 g/day diluted in 100 ml of distilled water was aerosolized during three sessions of 2 hours each by a small-particle aerosol generator for 3 consecutive days.

Patient Y.G. was not symptomatic or febrile when RSV was detected in his nasal wash. He started ribavirin therapy the day RSV was identified. Overt clinical disease started only 2 days after a 3 day ribavirin course, i.e., 5 days after initial identification of the infection. Increased oxygen need and severe respiratory distress progressed to respiratory insufficiency and mechanical ventilation within 10 days of onset of symptoms. His pulmonary function deteriorated progressively. Passive respiratory system compliance dropped from 1.15 before infection to 0.42 ml/cmH_2O/kg 2 months after RSV infection, and expiratory pulmonary resistance rose from 173 to 253 cmH_2O/L/sec (Sensormedics 2600). At the age of 15 months he was still on 0.3 L/min of oxygen.

Patient E.D. started ribavirin therapy 1 day after fever developed. His oxygen needs increased after 3 days of ribavirin therapy, and severe respiratory distress developed on the evening of day 4.

In the remaining two patients in whom oxygen had been discontinued months before the RSV infection, the disease ran a milder course, i.e., 4 days of increased tachypnea and wheeze.

Ribavirin has been shown by some to decrease morbidity in RSV bronchiolitis.[1] Other studies have been less convincing.[2,3] It is of concern that very severe disease occurred in our high-risk BPD patients despite very early institution of ribavirin treatment, even before clinical symptoms were present. It is uncertain whether a longer duration of treatment would have been more efficacious.

We conclude from these preliminary observations that ribavirin does not ensure a mild course for RSV bronchiolitis in high-risk patients, even when treatment is started very early. Hopefully, immunoglobulin prophylaxis will be of greater benefit than ribavirin aerosol therapy.

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