In the Netherlands, 395 patients with Down syndrome were hospitalized for respiratory tract infections caused by respiratory syncytial virus (RSV). The authors noted that palivizumab, a monoclonal antibody, is indicated for RSV prophylaxis in young children with Down syndrome. The study, conducted by investigators at University Medical Center Utrecht, aimed to report a higher incidence of hospitalization for RSV lower respiratory tract infections in these children.

The population came from two studies: one focused on 219 children born 1997-2005 and followed up to 2 years of age, and the second focused on a nationwide birth cohort of 241 children born 1976-2005, who were identified prospectively and followed up to 2 years of age. Clinical data were available for 176 and 219 children, respectively. The second study was the first to report a higher incidence of hospitalization for RSV lower respiratory tract infections in these children. The population came from two studies of children with Down syndrome. The first looked retrospectively at 206 children born 1976-2005 and followed at an outpatient clinic. The second focused on a nationwide birth cohort of 241 children born 2003-2005, who were identified prospectively and followed up to 2 years of age.

Clinical data were available for 176 and 219 children, respectively. The control group comprised all the siblings of children with Down syndrome, 13% of whom had mechanical ventilation. The median duration of hospitalization was 10 days, during which 31 children (80%) used supplemental oxygen and 5 children (13%) had mechanical ventilation.

As for clinical implications, the investigators noted that palivizumab, a monoclonal antibody, is indicated for RSV prophylaxis in young children with Down syndrome. They found that the Down syndrome population had a higher rate of hospitalization to what had been previously reported in children with premature CHD. "Our findings, therefore, support the possibility of a new indication for RSV prophylaxis in children with Down syndrome up to 2 years of age, although the safety and efficacy of such an approach remains to be determined," they wrote.

Dr. H. Cody Meissner, chief of pediatric infectious disease at Tufts-New England Medical Center and a professor of pediatrics at Tufts University, cautioned in an interview against drawing "too vigorous" conclusions from one study, but said that almonadre is indicated for RSV prophylaxis in children with Down syndrome up to 2 years of age, although the safety and efficacy of such an approach remains to be determined." He noted that children with Down syndrome not only are at increased risk for a number of infections but also have a different immune response from other children. Along with the higher incidence of CHD, he cited abnormal numbers of B cells and T cells and abnormal anatomy in the upper airways.

Until more research is done, however, Dr. Meissner recommended sticking to the guidelines defining risk factors for severe infection, and that the Down syndrome population had a higher rate of hospitalization to what had been previously reported in children with premature CHD. "Our findings, therefore, support the possibility of a new indication for RSV prophylaxis in children with Down syndrome up to 2 years of age, although the safety and efficacy of such an approach remains to be determined," they wrote.

Dr. H. Cody Meissner, chief of pediatric infectious disease at Tufts-New England Medical Center and a professor of pediatrics at Tufts University, cautioned in an interview against drawing "too vigorous" conclusions from one study, but called the report useful and "an interesting first step to address the issue of RSV in children with trisomy 21."

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Until more research is done, however, Dr. Meissner recommended sticking to the guidelines defining risk factors for palivizumab prophylaxis, updated and published by the American Academy of Pediatrics in the 2006 Red Book.

Dr. Andrew J. Nowalk of the Children's Hospital of Pittsburgh and University of Pittsburgh suggested in another interview that palivizumab prophylaxis might be considered when children with Down syndrome have repeated RSV infections even if they do not have known risk factors for severe RSV.

He described the findings from the Netherlands as provocative and voiced hope that they would drive interest in looking prospectively at whether children with Down syndrome are a risk group. "Respiratory infections are a scourge for them," he said.

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