Test Hospitalized Asthma Patients for Influenza

BY ROBERT FINN
San Francisco Bureau

HONOLULU — Consider influenza testing in children hospitalized for asthma because children with both conditions have almost five times the chance of intubation or death, compared with asthmatic children without a comorbid condition, according to a poster at the annual meeting of the Pediatric Academic Societies.

Dr. Alan S. Weller and Dr. Kitaw Demissie of the Robert Wood Johnson Medical School, New Brunswick, N.J., analyzed a nationally representative sample of 641,354 children, aged 2-17 years, who were included in the National Hospital Discharge Survey for 2001-2005. All were hospitalized primarily for asthma.

Of the 2,505 children with influenza in that group, 2% experienced an adverse outcome (intubation or death) with an adjusted odds ratio of 4.79 in the multivariate analysis, which corrected for age, race, gender, insurance, region, and comorbid conditions.

Influenza was the only comorbid condition that predicted adverse outcome. Children with sinusitis had a 63% lower chance of an adverse outcome, and those with upper respiratory infections had an 88% lower chance of an adverse outcome.

The investigators concluded that further studies would be required to characterize the role of these predictors and to formulate appropriate interventions for those in high-risk groups.

Dr. Weller disclosed no conflicts of interest related to this study. ■

Lung Function Declines Early In Sickle Cell

BY NANCY WALSH
New York Bureau

TORONTO — Lung function abnormalities are present at age 8 years in children with sickle cell disease, and the subsequent rate of decline is between 2% and 3% a year, according to new data.

"We were aware [of the lung function abnormalities] from cross-sectional studies, but they only look at one time point," and not across childhood," Dr. Joanna MacLean told an international conference of the American Thoracic Society.

The pattern of change, whether obstructive or restrictive, in pulmonary function also has not been well delineated in sickle cell disease. The researchers sought clarity because "there is a high mortality in early adulthood in sickle cell disease, with a major contributor being respiratory disease," said Dr. MacLean of the Hospital for Sick Children, Toronto.

The hospital's sickle cell clinic began requiring pulmonary function testing in 1989. Data for an unselected cohort of 413 children from then until 2005, beginning at age 8 years, were collected and analyzed using linear mixed effects modeling and compared with data for race-matched predicted values and reference equations in the African American population from the third National Health and Nutrition Examination Survey (NHANES III).

The study examined the contributions of age, gender, serum hemoglobin levels, and β-globin genotype on longitudinal changes in spirometry and lung volumes.

The sample consisted of 1,357 pulmonary function test results and 1,129 total lung capacity measurements. About 46% of the records were for males, and the records were evenly distributed across age groups, with a mean age of 12.7 years.

Significant declines were seen in percent predicted values for forced expiratory volume in 1 second (FEV_1) and forced vital capacity (FVC), though not for the FEV_1/FVC ratio. Total lung capacity (TLC) and residual volume/TLC ratios demonstrated a similar pattern of change.

There has been considerable interest in the relationship between sickle cell disease and asthma, but the spirometry data suggest a restrictive, rather than an obstructive, pattern. "It is possible that early in childhood, the pattern is more obstructive, as in asthma; but [toward] adulthood, the changes become fixed, showing a more restrictive pattern," she said in a press conference.

Previous data suggested early adulthood mortality is worse in females, but the current results suggested boys and girls alike had a decline in FEV_1 of 2.9% predicted per year.

The role of sickle cell genotype, hemoglobin SS or SC, was also evaluated. The SS genotype is more common and considered worse, but has never been examined in terms of lung function. "Children with the hemoglobin SS genotype had a rate of decline in lung function that was twice that of those with the SC genotype," she said. This novel finding is to be investigated. ■