Pennsylvania Study IDs Rheumatic Fever Subtypes

BY HEIDI SPLETE
Senior Writer

The identification of *emm* types from acute rheumatic fever patients seen at Children's Hospital of Pittsburgh between 1994 and 2003 could aid in vaccine development.

Acute rheumatic fever (ARF) persists in western Pennsylvania despite declining rates in the United States overall. Dr. Judith Marie Martin of the University of Pittsburgh, and her colleagues reviewed 121 cases in children aged 3-18 years. They studied the throat cultures of family members of the patients to look for trends in *emm* types. Carditis, arthritis, and chorea were the most common major clinical manifestations of ARF, and they were present in 57%, 48%, and 29% of patients, respectively (J. Pediatr. 2006;149:58-63).

Throat cultures were performed on 84 of the children with ARF and 147 family members for a total of 231 cultures.

Acute rheumatic fever is caused by complications from group A streptococcus (GAS) pharyngitis. Group A streptococcus (*Streptococcus pyogenes*) isolates were found in throat cultures from 30 children (36%) and 20 family members (14%), but only one of the family members was symptomatic at the time of the culture. Six families had more than one member with a positive throat culture, and in these cases the GAS samples were always the same *emm* type (1, 2, 12, 18, or 75) and had the same field inversion gel electrophoresis patterns. A total of 12 isolates from ARF patients and all 20 isolates from family members were available for *emm* typing. Types 12 and 18 were the most common, with nine isolates each.

This finding and other factors suggest that *emm* 12 might be associated with rheumatism and could be considered for a candidate GAS vaccine, although it had not been previously described as rheumatogenic, according to the researchers. ■