EPIDEMIOLOGY OF GROUP A STREPTOCOCCUS PHARYNGITIS IN BAMAKO SCHOOLCHILDREN

Samba O. Sow, MD1, Milagritos D. Tapia, MD2, Mahamadou M. Keita, MD1,
Boubou Tamboura, Pharm D1, Abdoulaye Berthe, MD1, Mariam Samake, PharmD1,
James Nataro, MD, PhD2, Robin Mason3, Fran Rubin, PhD3, James B. Dale, MD4,
Karen L. Kotloff, MD2

1 Centre pour le Développement des Vaccins – Mali, Bamako, Mali
2 University of Maryland School of Medicine, Baltimore, MD, USA
3 National Institute of Allergy and Infectious Diseases, Bethesda, MD, USA
4 University of Tennessee Health Science Center, Memphis, TN, USA

Objectives: Little is known about the epidemiology of group A streptococcal (GAS) infections in less developed countries, particularly those located in sub-Saharan Africa. To guide development of multivalent vaccines that could be used in this region, we prospectively measured the burden of GAS pharyngitis and distribution of \textit{emm}-types among schoolchildren in Bamako, Mali.

Methods: Four public schools in two low-income quartiers in Bamako, Mali were identified and a census of the student body was performed at the beginning of the study and during the subsequent school year. Study personnel were present in each school infirmary to identify 5- to 16-year old children with pharyngitis and to complete a clinical history and physical exam. A throat swab was obtained to culture GAS according to standard procedures. \textit{Emm}-typing was performed according to the Centers for Disease Control Protocol. All children with GAS pharyngitis were treated with penicillin or erythromycin. To date, surveillance has been conducted over a period of two school years (SY).

Results: From 1 June 2006 to 30 September 2007, there were 319 cases of pharyngitis detected among the students. Of these, 96 (30.1%) were positive for GAS; the incidence of GAS pharyngitis in SY1 and in SY2 was 4.8 per 10,000 child months of observation. Most cases were 8-13 years of age (n=70). Children with GAS isolated from the throat (TC+) were less likely than TC-negative children to report rhinorrhea (p=0.06), cough (p<0.01) and malaise (p=0.06) and on examination were more likely to have tonsillar exudates (p<0.001) and painful (p=0.02) and hypertrophic lymph nodes (p=0.04). \textit{Emm}-typing results are available for 49 isolates and represent at least 19 types.

Conclusions: These data suggest that GAS is an important cause of pharyngitis in Malian schoolchildren. \textit{Emm}-type distribution appears to be broad and distinct from that seen in many other regions of the world.