In-School Asthma Management and Physical Activity: Children’s Perspectives

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PURPOSE OF THE STUDY. The goal of this study was to explore children’s perspectives on in-school asthma management and barriers to physical activity at school.

STUDY POPULATION. Twenty-three 8- to 10-year-old students from 10 public elementary schools in the Bronx, New York, were interviewed. Students had physician-diagnosed asthma, with symptoms in the past 12 months, and were excluded if they had learning disabilities that would prevent interview data collection or if they had chronic medical conditions preventing them from participating in physical activities.

METHODS. A single author conducted all the interviews, which included questions about in-school physical activities, how the children felt during exercise, when the children went to the school nurse for their asthma, and how the children felt about taking asthma medications. The interviews were recorded and transcribed. Themes and content were analyzed with the use of qualitative analysis software.

RESULTS. Although most students only had physical education class 1 to 2 times weekly, most of them also experienced asthma symptoms during these class periods, as well as during recess. Most students focused on treating asthma symptoms that had already occurred rather than preventing symptoms, and this goal was mostly through stopping activity and drinking water rather than taking asthma medication. Similarly, most students prevented symptoms by avoiding physical activity rather than by using asthma medication. Less than one-half of the students reported carrying their medications with them at school, and some thought they were not allowed to do so and needed to keep their medication with the school nurse.

In addition, most students were afraid to take their medication in front of their classmates out of fear of teasing.

CONCLUSIONS. Major barriers to asthma control in school include students being unaware of an asthma action plan or preventive measures for asthma control. In addition, students’ social concerns and lack of ready access to their medication was a barrier to successfully treating symptoms without having the students sit out of physical activity.

REVIEWER COMMENTS. This study identifies some key areas in which pediatricians can provide additional education and communication to families and schools for their patients with asthma. Talking to parents about medication-carrying policies at their children’s schools and providing an additional copy of the asthma action plan to be given to a school, as well a note to allow a child to carry an inhaler if appropriate, can go a long way to facilitating the ability of these children to participate in much-needed physical activity. Pediatricians can also try to direct more education at the children about the importance of preventing symptoms, as well as counseling parents on how to encourage their children to monitor symptoms and take preventative steps in asthma control while at school.

Invasive Pneumococcal Disease in Children Can Reveal a Primary Immunodeficiency


PURPOSE OF THE STUDY. The goal of this study was to investigate all children hospitalized in France with invasive pneumococcal disease for possible immunodeficiency.

STUDY POPULATION. A total of 163 children were hospitalized in 28 pediatric wards throughout France between 2005 and 2011.

METHODS. A French national cooperative prospectively identified hospitalized patients with invasive pneumococcal disease that was based on the isolation of Streptococcus pneumoniae from an otherwise sterile site. Patients with HIV disease or sickle cell anemia were excluded. Clinical and family history, as well as pneumococcal vaccination status, was documented in all patients; laboratory studies included white blood cell counts, immunoglobulin levels, complement activity, and an abdominal ultrasound. Many of the patients were also evaluated for ex vivo toll-like receptor function.

RESULTS. Among these 163 patients, 17 had recurrent invasive pneumococcal disease, and meningitis was the most frequent presentation (87%). In 1 patient, an anatomic abnormality (ie, a congenital cerebrospinal fluid fistula) was identified as the basis for the recurrent meningitis.
Of the remaining patients, 26 children (16%) were found to have an immunologic abnormality, and a primary immunodeficiency was identified in 17 of these patients (10%). The majority of the patients with an identified immunodeficiency had a defect associated with antibody production, whereas there were also patients with complement defects (n = 3), MyD88 deficiency (n = 1), and congenital asplenia (n = 1). Importantly, patients presenting with invasive pneumococcal disease aged >2 years had a much higher risk of having a primary immunodeficiency (26% vs 2% in patients aged <2 years at presentation).

CONCLUSIONS. Patients presenting with invasive pneumococcal disease should undergo an immunologic evaluation, particularly those who present with disease who are aged >2 years.

REVIEWER COMMENTS. This study is the first prospective evaluation of immunized children presenting with invasive pneumococcal disease. The incidence during the first 4 years of the study (2005–2008) was 23 per 100,000 for children aged <2 years and 5 per 100,000 for children aged ≥2 years. Universal immunization with 7-valent pneumococcal conjugate vaccine was initiated in France in 2006, and this was switched to 13-valent pneumococcal conjugate vaccine in 2010, with vaccination coverage reaching ~93% by 2011. The majority of the serotypes found in the patients with invasive pneumococcal disease were not found in the 7-valent pneumococcal conjugate vaccine, suggesting that “herd” immunity is at play regarding the serotype exposure among susceptible children. This study may actually underestimate the frequency of invasive pneumococcal disease because it did not include children missed who may have died of this infection. The take-home message from the study is that any child who develops invasive pneumococcal disease should undergo an immunologic evaluation focused on leukocyte count and differential, immunoglobulin levels, and complement (classic and alternative pathway) activity. In addition, these patients should be assessed for congenital asplenia as well as anatomic abnormalities that could be associated with infectious susceptibility. If results of all these studies are unrevealing, referral to a clinical immunologist with expertise in primary immunodeficiency disorders should be considered for evaluation of toll-like receptor function.

Autosomal Recessive Phosphoglucomutase 3 (PGM3) Mutations Link Glycosylation Defects to Atopy, Immune Deficiency, Autoimmunity, and Neurocognitive Impairment


PURPOSE OF THE STUDY. The goal of this study was to investigate the clinical, laboratory, and molecular characteristics of patients with similar findings, including immunodeficiency, significant atopy, immune dysregulation, and neurocognitive developmental defects.

STUDY POPULATION. Eight patients from 2 different families underwent clinical, laboratory, and genetic evaluation.

METHODS. Patients were assessed clinically followed by an immunologic evaluation and whole-exome sequencing.
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