Safety and Efficacy of Pimecrolimus in Atopic Dermatitis: A 5-Year Randomized Trial

Topical corticosteroids are often used to treat atopic dermatitis (AD) in infants, although compliance is poor due to concerns over side effects. Pimecrolimus was shown to be a safe and effective noncorticosteroid treatment of AD in infants in short-term studies.

The Petite Study shows that long-term management of mild-to-moderate AD in infants with pimecrolimus or topical corticosteroids was safe without any effect on the developing immune system. Pimecrolimus had similar efficacy to topical corticosteroids and a marked steroid-sparing effect.

Pneumonia in Childhood and Impaired Lung Function in Adults: A Longitudinal Study

Early-life lower respiratory illnesses, including pneumonia, are associated with increased prevalence of asthma and diminished lung function in children. Whether early-life pneumonia is associated with subsequent impaired lung function and asthma in adults is not yet clear.

This is the first article providing strong data for an association between early-life pneumonia in an outpatient setting and airflow limitation and asthma into adulthood, supporting the hypothesis of the early-life origins of chronic obstructive pulmonary disease.

Antibiotic Exposure in Infancy and Risk of Being Overweight in the First 24 Months of Life

Subtherapeutic doses of antibiotics have been used as growth promoters in animal farming since the 1950s. Antibiotic exposure during infancy is associated with increased body mass in humans.

The weight-promoting effect of antibiotics is most pronounced when the exposure occurs at <6 months of age or repeatedly during infancy. Increased body mass is distinctly associated with exposure to cephalosporins and macrolides, especially in boys.

Clinical Features of Celiac Disease: A Prospective Birth Cohort

Celiac disease (CD) may develop at any age. Young children with CD are at particular risk for malabsorption and failure to thrive. HLA-DR3-DQ2 homozygotes are at the highest genetic risk and develop CD very early in life.

Most children with CD detected in screening by 4 years of age have no symptoms and normal growth. Symptoms are unrelated to HLA genotype. Autoantibody levels correlate higher with severity of mucosal lesions in symptomatic as compared to asymptomatic children.

Etiology of Childhood Bacteremia and Timely Antibiotics Administration in the Emergency Department

Childhood bacteremia caused by vaccine-preventable organisms has substantially declined over the last decade. Recognition of bacteremia in children is difficult, and delayed administration of antibiotics is associated with poor outcomes. Adults with health care–associated Gram-negative bacteremia experience delays in receiving appropriate antibiotics.
Bacteremia in children presenting to the emergency department is increasingly health care associated and resistant to empirical antibiotics. These infections are associated with increased length of stay. Rates of Gram-negative bacteremia have increased, and children with Gram-negative bacteremia experience delayed antibiotic administration.

Off-Label Use of Inhaled Nitric Oxide After Release of NIH Consensus Statement

Off-label prescription of inhaled nitric oxide (iNO) to neonates <34 weeks’ gestation has increased during the past decade. In early 2011, the National Institutes of Health determined that the available evidence did not support iNO use in this population.

Use of iNO among neonates <34 weeks’ gestation has increased since 2011, entirely from greater use in extremely preterm neonates. Off-label prescription of this drug now accounts for nearly half of all iNO use in American NICUs.

Motivational Interviewing and Dietary Counseling for Obesity in Primary Care: An RCT

Childhood obesity rates in the United States remain at historic highs. The pediatric primary care office represents an important, underutilized source of intervention. There is a need to test the efficacy of motivational interviewing for pediatric obesity in primary care.

This is among the first large-scale randomized trials to show significant reductions in BMI and that motivational interviewing, delivered by trained providers in the primary care setting, can be an important and feasible part of addressing childhood obesity.

Antipsychotic Medication Prescribing in Children Enrolled in Medicaid

Although the rates of antipsychotic medication treatment are rising for children and adolescents, little is known about the factors associated with this practice.

This study provides some of the first data regarding when and why clinicians decide to use antipsychotic medications. It reveals clues as to how prescribing might better follow best practice guidelines.

Physician Response to Parental Requests to Spread Out the Recommended Vaccine Schedule

Some parents choose to “spread out” the recommended vaccine schedule for their child by decreasing the number of simultaneous vaccines or delaying certain vaccines until an older age. Epidemiologic studies demonstrate increasing numbers of parents are choosing to delay vaccines.

We demonstrate that almost all providers encounter requests to spread out vaccines in a typical month and, despite concerns, increasing numbers are agreeing to do so. Providers report many strategies in response to requests but think few are effective.

Retinal Microvasculature and Cardiovascular Health in Childhood

Microvasculature alterations are associated with increased risk of hypertension in adults. Not much is known about the association of retinal vessel caliber with cardiovascular risk factors among children.

Narrower retinal arteriolar caliber is associated with higher blood pressure, mean arterial pressure, and pulse pressure in school-age children, whereas wider retinal venular caliber is associated with higher carotid-femoral pulse wave velocity. Microvascular adaptations might influence cardiovascular health from childhood onward.

Early Intervention for Toddlers With Language Delays: A Randomized Controlled Trial

Early language delay is common in toddlers and is associated with poor academic outcomes, reading difficulties, and persistent communication problems. Despite these long-term sequelae, few interventions for toddlers with early language delays yield positive expressive and receptive language results.

A 28-session program delivered over 3 months can enhance parent language facilitation strategies. Unusually, the small short-term benefits were mainly in receptive, rather than expressive, language and vocabulary. Extended follow-up could determine the costs versus benefits of this promising approach.

Pediatric Palliative Care and Inpatient Hospital Costs: A Longitudinal Cohort Study

Pediatric palliative care (PPC) improves the quality of life for children with life-limiting illness and their families. The association between PPC and health care costs is unclear and has not been studied over time.

PPC recipients were more medically complex. Receipt of PPC was associated with lower costs when death was near but with greater costs among survivors. When controlling for medical complexity, costs did not differ significantly according to receipt of PPC.
New Pediatricians: First Jobs and Future Workplace Goals

Concern exists about the ability of new general pediatricians to find jobs that match their career goals. A large majority of new pediatricians secure positions consistent with their career goals and desired responsibilities.

Diversity and Inclusion Training in Pediatric Departments

The diversifying US population has led to the examination of workforce diversity and training. National data on diversity, inclusion, and cultural competency training have been previously collected but have been assessed only at the macro level of medicine.

This study assesses workforce diversity, inclusion, and cultural competency training in departments of pediatrics across the country and provides the first assessment of departmental efforts to improve diversity and inclusion and provide cultural competency training to trainees and faculty.

Late Preterm Birth and Neurocognitive Performance in Late Adulthood: A Birth Cohort Study

More than 70% of all preterm deliveries are late preterm (34–36 weeks of gestation). Existing evidence suggests that compared with those born at term, those born late preterm score lower on neurocognitive tests in childhood and young adulthood.

The effect of late preterm birth on neurocognitive performance persists up to late adulthood, especially among those who have only a basic or upper secondary level of education. Late preterm birth is also associated with a risk of memory impairments.

Executive Function in Adolescents Born <1000 g or <28 Weeks: a Prospective Cohort Study

Preterm children often experience poor executive function (EF; skills underpinning adaptive, goal-directed behavior, and essential for positive academic, occupational, and social outcomes). EF matures across adolescence, but the nature and course of EF deficits for preterm adolescents is not well-described.

Extremely preterm/extremely low birthweight adolescents demonstrated small-to-medium deficits across multiple EF domains compared with normal birthweight controls. Preterm children improved on some EF aspects from age 8 to late adolescence relative to controls, but not on parent-rated behavioral EF.

Gestational Age and Developmental Risk in Moderately and Late Preterm and Early Term Infants

There is growing evidence reporting that moderately preterm, late preterm, and early term infants are at increased risk of developmental delay. The characteristics of this association are not well established in the literature.

In a sample of infants born between 32 and 41 weeks, there was an inverse and “dose response” relationship between gestational age and developmental delay risk using the ASQ at 8 and 18 months of corrected postnatal age.

Trajectories and Outcomes Among Children With Special Health Care Needs

Children with special health care needs are a growing population in developed countries. They are at risk for poorer learning and behavioral outcomes, and their parents are more likely to have poorer mental health.

Four distinct and replicable special health care need profiles across 2 childhood epochs were categorized as none, transient, emerging, and persistent. The cumulative burden of special health care needs shaped adverse outcomes more than did point prevalence.

Isolated Linear Skull Fractures in Children With Blunt Head Trauma

Many children with blunt head trauma and isolated skull fractures are admitted to the hospital. Several small studies suggest that children with simple isolated skull fractures are at very low risk of clinical deterioration.

In this large cohort of children with isolated linear skull fractures after minor blunt head trauma, none developed significant intracranial hemorrhages resulting in neurosurgical interventions. These children may be considered for emergency department discharge if neurologically normal.

Collaborative Care for Children With ADHD Symptoms: A Randomized Comparative Effectiveness Trial

Collaborative care is known to be an effective system to manage child behavioral health conditions in the primary care setting. Among urban children with attention-deficit/hyperactivity disorder, using lay care managers to address barriers to engagement with care and challenging child behaviors has the potential to improve the effectiveness of conventional collaborative care.
Continuous Positive Airway Pressure With Helmet Versus Mask in Infants With Bronchiolitis: An RCT

In a previous short-term physiologic randomized controlled trial, continuous positive airway pressure by helmet was feasible and efficient in improving gas exchange in pediatric acute respiratory failure due to bronchiolitis. Continuous positive airway pressure administered by helmet reduces the rate of noninvasive respiratory support failure and provides longer application time with less sedation than a facial mask. In addition, it is safe to use and free from adverse events.

13-Valent Pneumococcal Conjugate Vaccine (PCV13) in Preterm Versus Term Infants

Preterm infants are at an increased risk of infections; therefore, vaccination is of particular importance. Because immune response data reported for preterm infants may vary according to gestational age and vaccination timing, vaccine responses in this population warrant additional research.

This study evaluated 13-valent pneumococcal conjugate vaccine in preterm infants. Results suggest that this vaccine was well tolerated and immunogenic; most subjects achieved serotype-specific immunoglobulin G antibody levels and functional antibody responses likely to correlate with protection against invasive disease.

Government Health Care Spending and Child Mortality

After the recent economic recession, policy interventions including austerity measures led to reductions in government spending on health care in many countries. However, there is limited research into the effects of changes in government health care spending on child health.

Reductions in government health care spending are associated with long-lasting adverse effects on child health globally, especially in low-income countries. Given pressures to diminish health expenditures, we caution that reduced spending should be achieved through increased efficiency of care delivery.

Antidepressant Use During Pregnancy and Asthma in the Offspring

Asthma is one of the most common chronic diseases in children. It has been suggested that maternal depression during pregnancy is associated with asthma in the offspring, but the role of antidepressant use during pregnancy is not known.

In our prospective cohort study, we found that maternal antidepressant use during pregnancy generally did not increase the risk of asthma except for use of older antidepressants, which could reflect confounding by the severity of maternal depression.

Vitamin B-12, Folic Acid, and Growth in 6- to 30-Month-Old Children: A Randomized Controlled Trial

Micronutrient deficiencies, including deficiencies of vitamin B-12 and folate, are common worldwide and may be a contributing factor to the estimated 165 million stunted children.

Routine supplementation of vitamin B-12 improved linear and ponderal growth in subgroups of young Indian children. We provide evidence that vitamin B-12 deficiency is a contributor to poor growth in low- and middle-income countries.

Comorbidity of Physical and Mental Disorders in the Neurodevelopmental Genomics Cohort Study

Although there is evidence regarding comorbidity of physical and mental disorders from clinical samples of specific disorders and treatment registries, there is limited evidence from systematic samples of youth with comprehensive information on the full range of mental and physical disorders.
This report is the first study to investigate the specificity of associations between a broad range of mental and physical conditions by using a large, systematically obtained pediatric sample with enriched information from electronic medical records and direct interviews.

**Handheld Echocardiography Versus Auscultation for Detection of Rheumatic Heart Disease**

Handheld echocardiography is a more portable and lower-cost alternative to standard echocardiography for rheumatic heart disease screening. Direct comparison of handheld echocardiography and auscultation for the detection of rheumatic heart disease has not been done previously. Handheld echocardiography significantly improves detection of rheumatic heart disease compared with auscultation alone and may be a cost-effective screening strategy in developing countries.

**Cardiac Biomarkers and Acute Kidney Injury After Cardiac Surgery**

Acute kidney injury (AKI) occurs in up to 50% of children after cardiopulmonary bypass and is associated with adverse outcomes. Renal biomarkers have been shown to predict postoperative AKI, but few studies have examined cardiac biomarkers for risk classification. Preoperative levels of creatine kinase-MB and heart-type fatty acid binding protein are strongly associated with the development of postoperative AKI after pediatric cardiac surgery and can be used to improve preoperative clinical risk prediction.

**Sociodemographic Attributes and Spina Bifida Outcomes**

Functional capabilities in patients with spina bifida depend on the spinal level of the lesion and its type. Sociodemographic characteristics have been shown in other conditions to be an important additional influence on outcomes, making them important for risk adjustment. Males, non-Hispanic blacks, and patients without private insurance have less favorable functional outcomes in spina bifida, and age also has an impact. These attributes need to be considered by clinicians and researchers and used in comparing care outcomes across clinic settings.

**Parent-Reported Outcomes of a Shared Decision-Making Portal in Asthma: A Practice-Based RCT**

Strategies are needed to engage families of chronically ill children at home in an ongoing process of shared decision-making regarding treatment that is responsive to families’ concerns and goals and children’s evolving symptoms. This study evaluated a novel patient portal that facilitates shared decision-making in asthma. The portal was feasible and acceptable to families, improved outcomes, and provides a model for improving care through an electronic health record portal.

**Infectious and Autoantibody-Associated Encephalitis: Clinical Features and Long-term Outcome**

Encephalitis is a serious and disabling condition. There are infectious and immune-mediated causes of encephalitis, but many cases remain undiagnosed. This large single-center study on childhood encephalitis provides insight into the relative frequency and clinicoradiologic phenotypes of infectious, autoantibody-associated, and unknown encephalitis. Risk factors for an abnormal outcome are also defined.

**Diagnosis of Viral Infections Using Myxovirus Resistance Protein A (MxA)**

Myxovirus resistance protein A (MxA) is a protein induced during viral infections. A few small-scale studies have suggested that MxA could be used as a marker of viral infection in clinical routine practice. This study involves the largest patient population thus far and confirms the usefulness of MxA for diagnosing viral infections in children consulting the emergency department in a clinical routine setting.

See the table of contents of this issue to learn more about these articles.