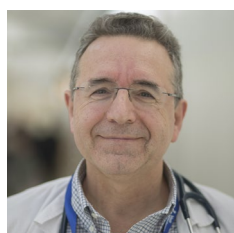


Asthma from infancy to childhood, and allergy perception in adolescents

This second issue of *Pediatric Allergy and Immunology* for 2020 opens with a review article on immunodeficiency. It is well known to the pediatrician that children with Down's syndrome suffer from various congenital health problems, the most prominent probably being heart abnormalities. Allergists and immunologists are well aware of recurrent infections in these children. Ruud Versteegen and colleagues remind us that recurrent respiratory infections largely contribute to the morbidity of these children and comment on prophylactic factors that should be considered.¹ In addition, these children are prone to autoimmune diseases justifying targeted screening for relatively common autoimmune diseases such as celiac disease. Further articles on immune deficiencies can be found recently published in PAI.^{2,3}



Antonio Moreno-Galdó

Preventing early-life wheezing and later development of asthma remains a major task for allergists, as these largely contribute to infant and childhood morbidity. In the first editor's choice of this issue, Antonio Moreno-Galdó et al⁴ have addressed short- and long-term respiratory morbidity in moderate-late preterm infants. They aimed to determine the incidence of recurrent wheezing and associated risk and protective factors in these infants during the first 3 years of life. In a cohort of almost 1000 children, they found that independent risk factors for recurrent wheezing included daycare attendance, acetaminophen use during pregnancy, and need for mechanical ventilation early in life. Atopic dermatitis and male sex could also be associated with recurrent wheezing. It is well known that early respiratory viral infections are major risk factors for later asthma,⁵ and in this study, palivizumab given for prophylaxis of RSV during the first year of life decreased the risk of recurrent wheezing in the third year of life. Studies on early-life wheezing and later trajectories for obstructive respiratory diseases are limited by the variety of the clinical phenotypes and the complexity of the pathomechanisms. Much is still not elucidated, and PAI regularly contributes to the progression of knowledge in these research areas.⁶⁻⁸



Ting Fan Leung

Asthma is most representative of diseases with an allergic component as it is largely influenced by the environment, as developed in the first commented article, but also by individual genetic factors. In the second featured article of this issue, Ting Fan Leung and colleagues from Hong Kong study the association between polymorphic markers of the gene encoding cadherin-related family member 3 (CDHR3) and wheezing phenotypes in two independent cohorts of Chinese children.⁹ They found significant associations between CDHR3 SNPs and current wheeze, severity of wheezing, and forced expiratory indices among pre-school children. Various studies have recently been published in this journal concerning genetics and asthma. Similarly to this article, Shagiwal et al¹⁰ have examined the relationship between genetics and lung functions. The link between genetic variants, early wheeze, and viral infections has also been studied.^{11,12} Inflammation is a major contributor to the pathogenesis of asthma, and gene expression is largely influencing cytokine expression.¹³⁻¹⁵ Finally, gene variants may also influence asthma treatment efficiency, such as outlined recently in a systematic review on pharmacogenetics of inhaled long-acting beta2-agonists in asthma.¹⁶



Polly James

In the third study featured in this editorial, Polly James and M. Rosario Caballerio studied a very relevant issue strongly influencing patient adherence to the treatment, that is, illness perception of allergic adolescents.¹⁷ In this study, the authors used the Brief Illness Perception Questionnaire (BIPQ) in adolescents with allergies and correlated findings with demographic and clinical conditions. There was a significant difference between genders with females showing the highest emotional representation score. Also, older adolescents reported a more chronic perception of their allergies. Adolescents are peculiar patients, who often avoid seeking health care, or who largely dismiss their allergies. It is most desirable to have a better understanding of how to address this age group,^{18,19} and having a clear understanding of how they perceive their allergies could be most helpful. Few studies specifically address this age group; nevertheless, we may refer interested PAI readers to a recently published article.²⁰

Please allow some reading time to the other articles featured in this issue of PAI. We hope they will foster better clinical care and new research ideas.

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REFERENCES

1. Verstegen RHJ, Chang KJJ, Kusters MAA. Clinical implications of immune-mediated diseases in children with down syndrome. *Pediatr Allergy Immunol.* 2020;31:<https://doi.org/10.1111/pai.13133>
2. Patel NC. Individualized immunoglobulin treatment in pediatric patients with primary humoral immunodeficiency disease. *Pediatr Allergy Immunol.* 2018;29:583-588.
3. Amirifar P, Ranjouri MR, Yazdani R, et al. Ataxia-telangiectasia: A review of clinical features and molecular pathology. *Pediatr Allergy Immunol.* 2019;30:277-288.
4. Moreno-Galdó A, Pérez-Yarza EG, Ramilo O, et al. Recurrent wheezing during the first 3 years of life in a birth cohort of moderate-to-late preterm infants. *Pediatr Allergy Immunol.* 2020;31:<https://doi.org/10.1111/pai.13134>
5. Mejias A, Wu B, Tandon N, et al. Risk of childhood wheeze and asthma after respiratory syncytial virus infection in full-term infants. *Pediatr Allergy Immunol.* 2020;31:<https://doi.org/10.1111/pai.13131>.
6. Yang L, Narita M, Yamamoto-Hanada K, et al. Phenotypes of childhood wheeze in Japanese children: a group-based trajectory analysis. *Pediatr Allergy Immunol.* 2018;29:606-611.
7. Owora AH, Becker AB, Chan-Yeung M, et al. Wheeze trajectories are modifiable through early-life intervention and predict asthma in adolescence. *Pediatr Allergy Immunol.* 2018;29:612-621.
8. Bougas N, Just J, Beydon N, et al. Unsupervised trajectories of respiratory/allergic symptoms throughout childhood in the PARIS cohort. *Pediatr Allergy Immunol.* 2019;30:315-324.
9. Leung TF, Tang MF, Leung ASY, et al. Cadherin-related family member 3 gene impacts childhood asthma in Chinese children. *Pediatr Allergy Immunol.* 2020;31:<https://doi.org/10.1111/pai.13138>
10. Shagiwal SS, den Dekker HT, de Jongste JC, et al. Influence of genetic variants on childhood lung function-The Generation R Study. *Pediatr Allergy Immunol.* 2018;29(6):589-595.
11. Hammar KS, Niespodziana K, van Hage M, et al. Reduced CDHR3 expression in children wheezing with rhinovirus. *Pediatr Allergy Immunol.* 2018;29:200-206.
12. Popovic M, Fiano V, Fasanelli F, et al. Differentially methylated DNA regions in early childhood wheezing: an epigenome-wide study using saliva. *Pediatr Allergy Immunol.* 2019;30:305-314.
13. Landgraf-Rauf K, Boeck A, Siemens D, et al. IRF-1 SNPs influence the risk for childhood allergic asthma: a critical role for pro-inflammatory immune regulation. *Pediatr Allergy Immunol.* 2018;29:34-41.
14. Johansson K, McSorley HJ. Interleukin-33 in the developing lung—Roles in asthma and infection. *Pediatr Allergy Immunol.* 2019;30:503-510.
15. Laurence C, van der Merwe L, Zhang G, et al. Association between pro-inflammatory alleles and allergic phenotypes in Xhosa adolescents. *Pediatr Allergy Immunol.* 2018;29:311-317.
16. Slob EMA, Vijverberg SJH, Palmer CNA, et al. Pharmacogenetics of inhaled long-acting beta2-agonists in asthma: a systematic review. *Pediatr Allergy Immunol.* 2018;29:705-714.
17. James P, Caballero MR. Illness perception of adolescents with allergic conditions under specialist care. *Pediatr Allergy Immunol.* 2020;31:<https://doi.org/10.1111/pai.13169>
18. Tsilochristou O, Maggina P, Zolkipli Z, et al. Current state and future of pediatric allergology in Europe: a road map. *Pediatr Allergy Immunol.* 2018;29:9-17.
19. Papadopoulos NG, Čustović A, Cabana MD, et al. Pediatric asthma: An unmet need for more effective, focused treatments. *Pediatr Allergy Immunol.* 2019;30:7-16.
20. Nilsson S, Ödling M, Andersson N, et al. Does asthma affect school performance in adolescents? Results from the Swedish population-based birth cohort BAMSE *Pediatr Allergy Immunol.* 2018;29:174-179.