

Abstract Submission

Common ESPGHAN Topics

Basic Science

ESPGHAN2014-1643

DECREASE IN IL-15 PRODUCTION BY CORD BLOOD MONONUCLEAR CELLS AS A MARKER OF ATOPIC DISEASE DURING CHILDHOOD

Catherine Lombard ¹Floriane André ¹Jérôme Paul ²Catherine Wanty ³Olivier Vosters ⁴Pierre Bernard ⁵Charles Pilette ⁶
Pierre Dupont ²Etienne Sokal ³Françoise Smets ^{3,*}

¹Pediatrics, Université Catholique de Louvain, IREC, 1200 Brussels, ²INGI, Machine Learning Group, Université Catholique de Louvain, ICTEAM, 1348 Louvain-La-Neuve, ³Pediatrics, UCL, IREC, Cliniques universitaires Saint-Luc, 1200 Brussels, ⁴IRIBHM, Université Libre de Bruxelles, 1070 Brussels, ⁵Obstetrics, ⁶Pneumology, UCL, IREC, Cliniques universitaires Saint-Luc, 1200 Brussels, Belgium

Presentation Preference: No Preference

Objectives & Study: Allergy afflicts one third of children, negatively impacting their quality of life and generating a significant socio-economical burden to society. To this day, this disorder remains difficult to diagnose early in very young patients, and there is no predictive test available. This study was designed to correlate cytokine profiles with clinical phenotypes of allergy development.

Methods: Three hundred patients were recruited and followed from birth to 18 months of age. They were given a clinical exam at birth and at 2, 6, 12, and 18 months of age, with skin prick tests at 6, and 18 months, in order to have a record of their medical history and determine their allergic status. In addition, mononuclear cells were isolated from cord blood samples at birth and from peripheral blood samples at 2, 6 and 18 months of age, to analyse their cytokine and chemokine production. These analyses were performed on a subgroup of 131 patients.

Results: CBMCs from future atopic children produced significantly less IL-12p70 and IL-15 than cells from non-atopic children. Multivariate analyses revealed that the best predictive model of allergy was built on cytokine data, whereas the best predictive model of atopy was built on clinical parameters.

Conclusion: Although univariate analyses can yield interesting information regarding the immune responses of allergic or atopic children, finding predictive markers of the disorders will likely rely on monitoring multiple parameters. Nonetheless these analyses suggest a potential key role for IL-15 in the development of atopy. In addition, the study highlights the importance of clinical parameters such as a history of allergy and breastfeeding in predicting the development of atopy.

Disclosure of Interest: None Declared