EARLY DRY COUGH AND DYSPNOEA AS MARKERS OF ALLERGIC AND INFECTIOUS BRONCHIAL OBSTRUCTIVE PHENOTYPES IN INFANCY: RESULTS FROM THE FOLLOW-UP OF THE PARIS BIRTH COHORT

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Background and Aims: Asthma diagnosis during infancy is difficult: wheezing is quite frequent, notably due to respiratory infections, but all wheezers will not develop asthma. Thus, identification of phenotypes based on different respiratory symptoms has become one of the current challenges. We previously identified two bronchial obstructive phenotypes during the first year of life in 2632 infants from the PARIS birth cohort, using an unsupervised statistical approach: G1, presenting dry night cough, and G2, suffering from nocturnal dyspnoea. The present study aims to follow the evolution of the G1 and G2 children between 1 and 3 years and to examine whether the identified bronchial obstructive phenotypes are stable and whether they differ with regard to comorbidity and associated environmental factors.
Methods: Data about children's health and their mode/environment of life were gathered by self-administered questionnaires parents filled in 5 times during the first year of life, and at 2 and 3 years. Risk factors associated to G1 and G2 phenotypes were studied using polytomous logistic regression in comparison to the asymptomatic group G0.
Results: G1 and G2 phenotypes were persistent at 3 years, and comorbidity was quite different between both groups. G1 infants suffered significantly more often from allergic diseases such as eczema, food reactions, and nose disorders associated with itchy-watery eyes, whereas the G2 group was dominated by upper/lower respiratory infections. The analysis of associated factors corroborated these two distinct profiles. Parental history of allergy and potential contact with allergens were associated to G1. Conversely, exposure to chemicals, through prenatal and postnatal ETS exposure, renovation of the child's bedroom or acquisition of particleboard furniture, was significantly more frequent in G2, suggesting a synergistic effect on infections.
Conclusions: Early dry cough and nocturnal dyspnoea appear as markers of two distinct stable profiles, respectively allergic (G1) phenotype and infectious (G2) phenotype.