Introduction: Acute bronchiolitis (AB) in the first 2 years of life has been associated with later development of wheezing, asthma, abnormal lung function and sensitisation, especially in the severely ill infant requiring admission. The objectives of this study are to determine the prevalence of wheezing and abnormal lung function in a group of pre-school children (PSC) admitted for acute bronchiolitis in the first two years of life, and correlate with risk factors at the acute episode [respiratory syncytial virus (RSV), younger age and severity]. These are preliminary results of a long-standing study.

Method: A retrospective cohort survey was conducted, based on a previous evaluation of children admitted to the hospital setting for the first episode of AB between 2002-04. In this cohort, age <6 weeks was found as a risk factor for severity; length of hospital stay was M (±SD) 6 (± 4,5) days and time on oxygen, M (±SD) 4 (± 3,72) days. Severity of the acute episode was additionally defined as length of hospital stay ≥6 days and time on oxygen ≥4 days. Outcomes looked for were any episode of wheezing after the acute episode and abnormal lung function (LF). Multivariable logistic regression models were used to calculate odds ratios for outcomes adjusted for potential confounders. All analyses were performed using version 12.0 of the SPSS software system.

Results: A total of 35 children were evaluated. The prevalence of wheezing was 62,9% (22 cases); at acute episode 6 (27,2%) were positive for RSV, 7 (31,8%) were <6 weeks old, 11 (50,0%) had a longer hospital stay and 10 (45,5%) had long time on oxygen. Eighteen children performed LFT: 3 evidenced an obstructive pattern with positive broncodilation test. In the group without any episodic wheezing [13 (37%)], 1 (7,7%) was positive for RSV, 4 (30,8%) were <6 weeks old, 8 (61,5%) had a length of stay ≥6 days and 7 (53,8%) had days on oxygen ≥4. LFT was performed by 11 children, 2 showed an obstructive pattern and 1 had a positive broncodilation test.

A family history of allergy was found in 14 (66,7%) cases with wheezing and in 7 (33,3%) without (crude OR [IC] 1.5 [0.372 -6.047]). In multivariable logistic regression model only the 19 cases tested for RSV were considered. Since length of hospital stay and days on oxygen (DO) were positively correlated, only DO was considered for the model. After adjustment for family atopy, RSV, OR 3,2, 95% CI 0,13-78,1 and younger age, OR 7,2 CI 0,26-203,5 tend to be associated with wheezing, though without statistical significance and showing wide variation.

Conclusion: This study shows a high prevalence of wheezing in preschool children after an acute severe episode of bronchiolitis in infancy. RSV and younger age at the acute episode seem to be related with subsequent wheezing. We anticipate that a greater number of cases will help clarifying these findings.