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**Title:** Endobronchial biopsies in children with protracted bacterial bronchitis

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**Body:** Background – Aim: Despite several studies having investigated the inflammation in Protracted Bacterial Bronchitis (PBB), with the use of bronchoalveolar lavage (BAL), there is a scarcity of information about disease pathogenesis in the airway walls. The aim of this study was to identify the inflammatory cell populations that infiltrate the airways in PBB. Methods: Study population was consisted of 35 patients with long-term wet cough (>8 weeks) and a temporal or partial response after one or more courses of antibiotics. All patients underwent Flexible Bronchoscopy with BAL and endobronchial biopsy with tissue sampling from carina. Children were antibiotic-free for at least 1 week. Quantitative cultures of BAL were considered positive if they rendered growth of  $\geq 10^5$  cfu/mL, or growth of  $\geq 10^4$  cfu/mL if only one pathogen was isolated. Biopsy samples were stained for morphology and findings were described semi-quantitatively. Cell counts 1-5, 6-10, and >10 for eosinophils, and 1-100, 101-300, and >300 for all other cells, were defined as grades 1, 2, and 3, respectively. Results: All patients had positive BAL cultures. Median grades in biopsy samples were 0 for eosinophils and 1 for all other cells (histiocytes, plasmacytes, and lymphocytes). We were unable to detect any neutrophils on endobronchial tissues whereas on BAL the mean (sd) percentage of neutrophils was 15.7 (1.9). Conclusion: The lack of neutrophilic infiltration in bronchial mucosa implies a quite distinct pattern of inflammation from the one present in airway lumen whereas the rarity of eosinophils denotes that the underlying pathology differs from asthma.