

DOI: 10.5152/TurkThoracJ.2019.245

[Abstract:0699] OP-114 [Accepted: Oral Presentation] [Pediatric Lung Diseases]

Evaluation of Serum Chitinase Levels as Inflammation Markers in Patients with Cystic Fibrosis and Bronchopulmonary Dysplasia

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Objectives: Inflammation has a key role in the pathogenesis of respiratory diseases such as cystic fibrosis (CF) and bronchopulmonary dysplasia (BPD) and treatment of these diseases targets the suppression of inflammation. Measurement of inflammation is important in evaluating treatment efficacy. There are studies suggesting that the increase in serum chitinase and chitinase-like proteins may be used as a marker of inflammation in diseases such as asthma and chronic obstructive pulmonary disease. In our study, we aimed to determine whether serum levels of chitinase, a chitinase-like protein were effective in indicating the presence of chronic inflammation in CF and BPD patients.

Methods: Eight CF, 21 BPD and 20 healthy controls were included in the study. Demographic findings and serum C-reactive protein (CRP), albumin (ALB), CRP/ALB and chitinase levels of children in the groups were compared.

Results: The median body weight and height values of the patients followed with BPD were lower than those of the other two groups. There was no statistically significant difference between the groups in terms of serum median CRP, ALB, CRP/ALB and chitinase levels.

Conclusion: The results of the study did not support that serum chitinase level is effective in detecting inflammation in patients with CF and BPD. Absence of difference between groups in terms of serum CRP levels and CRP/ALB ratios may indicate the absence of inflammation in CF and BPD patients. Further studies with more patients are needed.

Keywords: Bronchopulmonary dysplasia, cystic fibrosis, inflammation, marker