

ROLE OF HIGH- SENSITIVITY C REACTIVE PROTEIN (hs-CRP) IN ASSESSMENT OF ASTHMA CONTROL IN CHILDREN

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Abstract

Introduction: Data are scarce on hs-CRP as a biomarker for airway inflammation in pediatric asthma. We aimed to examine correlation between hs-CRP and asthma control levels. **Methods:** Children with physician-diagnosed asthma, ages 6 to 15 years, were enrolled. Asthma control criteria of GINA-2016 were used to assess the level of asthma control. The relationships between serum hs-CRP and each of asthma control measures (Asthma control criteria, spirometry, impulse oscillometry, eosinophil counts and Fractional exhaled nitric oxide (FeNO) were assessed. **Results:** Out of total 150 asthmatic children; 52 (35%) had well controlled asthma, 76 (51%), and 22 (14%) children had partly controlled and uncontrolled asthma, respectively. Median (IQR) values of hs-CRP were 0.47 (0.1, 1.67) mg/L in well controlled, 0.30 (0.1, 1.83) mg/L in partly controlled, and 2.74 (0.55, 3.74) mg/L in uncontrolled asthma ($p=0.029$). Correlation between hs-CRP and FEV1% was significant ($p=0.019$). Using Receiver Operator Characteristic (ROC) analysis, area under curve for hs-CRP mg/L to discriminate between uncontrolled and (controlled + partly controlled) asthma was 0.67 (95% CI 0.55, 0.80) and a cutoff 1.1 mg/L of serum hs-CRP level had a sensitivity of 68.1% with specificity of 67.97%. In two groups of hs-CRP (< 3 mg/L) and hs-CRP (≥ 3 mg/L), high hs-CRP group had higher proportion of uncontrolled asthmatic children ($p=0.03$). **Conclusion:** Our study demonstrated higher serum hs-CRP values in uncontrolled asthma that supports the use of hs-CRP as surrogate marker of small airway inflammation. hs-CRP may be considered as a tool to predict asthma status.

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