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Title: Is serum cholesterol a risk factor for asthma?

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Body: Background: Proinflammatory role of serum cholesterol in asthma has been recently explored with contradicting results. Clarity on the link between serum cholesterol and asthma may lead to newer options in planning management strategies. The objective of our study was to examine the relationship between serum cholesterol, asthma and its characteristics. Method: Forty asthmatics and 40 normal subjects were examined cross-sectionally and their serum fasting cholesterol and serum highly sensitive C reactive protein (hsCRP) levels were measured along with other baseline investigations. All subjects were non smokers. Results: Serum total cholesterol (mean \pm SD) among asthmatics was 176.45 ± 30.77 mgs / dL as compared to 163.33 ± 26.38 mgs / dL among normal subjects ($P < 0.05$). This higher serum cholesterol level was found to be associated with asthma independent of age, gender, BMI, Socioeconomic status and serum hsCRP levels. However the association was only modest {adjusted odds ratio 1.027 (95% CI 1.005 – 1.049) $p < 0.05$ }. There was no association between serum cholesterol and asthma characteristics like duration of illness, intake of inhaled steroids and frequency of emergency department visits. Conclusion: Our study found a weak but statistically significant association between higher levels of serum cholesterol and asthma which is independent of age, gender, BMI, socioeconomic status and serum hsCRP. Future research is required in a larger population to substantiate above association and its clinical implications.