Association of Dyslipidemia and Pulmonary Function in Asthmatic Children

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Introduction
Dyslipidemia contribute to the development of a pro-inflammatory state that could worsen asthma. We would like to investigate whether this systemic inflammation could affect pulmonary function in asthmatic children with dyslipidemia.

Materials and Methods
Asthmatic children aged 6 – 18 years old were enrolled. Spirometry, forced oscillation technique (FOT), fractional exhaled nitric oxide (FENO) and alveolar nitric oxide (NO) were performed. Blood lipid profiles were measured in fasting blood samples.

Result
There were no significant differences in the value of spirometry, FOT, FENO and NO between subjects with dyslipidemia and subjects with normal lipid profile.

Subgroup Analysis: Female Asthmatic Children

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal LDL-C: [LDL ≤ 130 mg/dL] (N = 29)</th>
<th>High LDL-C: [LDL ≥ 130 mg/dL] (N = 11)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALX</td>
<td></td>
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<tr>
<td>area of reactance at 5 Hz [cmH2O/L]</td>
<td>-0.69 (-1.19, -0.43)</td>
<td>0.034</td>
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<td>Median [25%-75%]</td>
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Interestingly, subgroup analysis has demonstrated that female asthmatic children with high LDL-C had a significant higher value of ALX (area of reactance) and X5 (reactance at 5 Hz) than that of the asthmatic children with normal LDL-C

Conclusion
- Female asthmatic children with high LDL-C had a greater value of ALX and X5.
- The pro-inflammatory effect of lipid in asthma may have sex prevalence and resulting in changes in the peripheral airways.