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Title: Pulmonary function in children with acute myeloid and lymphoid leukemia  

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Body: Background: Leukemias are the most common malignancy in children and adolescents. Aim: To assess pulmonary function in children with acute leukemia in the maintenance phase of chemotherapy treatment, and compare it with healthy school children. Method: 34 children were evaluated (24 boys, 6.83±1.40 years; 10 girls, 6.2±1.0 years) assigned into Group A: 17 children with acute leukemia (BMI: 16.09±2.67 kg/m2) and group B: 17 healthy students (BMI: 15.46±1.95 kg/m2), matched for gender, age and height. The thoracic mobility was evaluated by thoracic expansion in the axillary and xiphoid levels. Spirometry was measured following American Thoracic Society and European Respiratory Society. Maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) were measured with a digital manometer. The student’s T-tests were used to compare values found in group A with group B. Results: The comparison between groups A and B for the evaluated variables is shown in table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group A (n= 17)</th>
<th>Group B (n= 17)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC (cm)</td>
<td>4.08 ± 1.04</td>
<td>5.14 ± 0.84</td>
<td>0.003*</td>
</tr>
<tr>
<td>XRC (cm)</td>
<td>3.88 ± 0.99</td>
<td>4.85 ± 0.93</td>
<td>0.006*</td>
</tr>
<tr>
<td>FEV1 (L)</td>
<td>1.16 ± 0.26</td>
<td>1.34 ± 0.29</td>
<td>0.060</td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td>94.12 ± 5.60</td>
<td>93.24 ± 7.03</td>
<td>0.688</td>
</tr>
<tr>
<td>MIP (cmH2O)</td>
<td>44.71 ± 11.80</td>
<td>63.82 ± 17.75</td>
<td>0.000*</td>
</tr>
<tr>
<td>MEP (cmH2O)</td>
<td>62.76 ± 19.03</td>
<td>67.82 ± 15.28</td>
<td>0.399</td>
</tr>
</tbody>
</table>

* p<0.05. ARC: axillary respiratory coefficient, XRC: xiphoid respiratory coefficient; FEV1: forced expiratory volume in the first second, FVC: forced vital capacity, FEV1/FVC: ratio of forced expiratory volume in the first second to forced vital capacity, MIP: maximal inspiratory pressure and MEP: maximal expiratory pressure.
Conclusion: The findings of this study show a decreasing in thoracic mobility and inspiratory muscle strength in children with acute leukemias.