Ambulatory blood pressure monitoring: Importance for determination of white coat hypertension in children

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Introduction: Identification and treatment of hypertension should be an important focus of physicians caring for children. White coat hypertension is defined as BP levels that are the 95th percentile or higher when measured in the physician’s office or clinic but are completely normal average BP 90th percentile outside of a clinical setting. Although intensively discussed and finally accepted in recent years, white coat hypertension (wch) still raises the question of the benefit of diagnosing it in pediatric patients as its possible link with the subsequent essential hypertension is not clear yet.

The aim of the study: Selected use of ambulatory blood pressure monitoring to identify children with white coat hypertension, thus avoiding unnecessary diagnostic testing and treatment of these children.

Methods: 160 children (aged 12 to 19 years) participated in the study. Based on office systolic and diastolic blood pressure measurements and 24-hour ambulatory blood pressure monitoring, subjects were placed into one of two groups: first, normotensive, and second, white coat hypertensive.

Results: Forty three percent (68 children) of 160 subjects with systolic or diastolic blood pressures greater than or equal to 95th percentile were reclassified as white coat hypertension; 57% remained hypertensive. The ambulatory blood pressure monitoring patterns of white coat hypertensive patients were significantly different from those of hypertensive patients. The mean values of systolic, diastolic and mean arterial pressure were significantly higher in children with essential hypertension than in the group with white coat hypertension (tab.1).

Table 1.

<table>
<thead>
<tr>
<th>Dg.</th>
<th>n</th>
<th>SBP</th>
<th>t-test</th>
<th>DBP</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>HtS</td>
<td>92</td>
<td>121</td>
<td>p&lt; 0.001</td>
<td>70</td>
<td>p&lt; 0.001</td>
</tr>
<tr>
<td>WCH</td>
<td>68</td>
<td>110</td>
<td>p&lt; 0.001</td>
<td>66</td>
<td>p&lt; 0.001</td>
</tr>
</tbody>
</table>

BP indicates blood pressure, SBP - systolic blood pressure, DBP - diastolic blood pressure, MAP - mean arterial blood pressure.

Conclusions: This study documented the existence of white coat hypertensive children and showed that white coat hypertensive children were significantly different from hypertensive children in comparisons of 24-hour ambulatory blood pressure monitoring data.