One Year Screening Program for Stature Deviations - Strategy and Outcome

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Background:
Many children still miss the early recognition of their stature problems due to inefficient screening strategies.

Objective and hypotheses:
To assess stature deviations referral through recruiting general practitioners (GPs) and providing them with tools for easier anthropometric data assessment and enhanced access to the Paediatric Endocrinologist.

Methods:

Recruitment and training
31 general practitioners (GPs) recruited
Total of 23 058 patients (ages 2-18)
Duration of the program 1 year
28 GPs: Computer Software, alerting if height/weight¹/waist circumference² were ≥ /±2/SDS
3 GPs: Table sheets with height/weight¹/waist circumference² data
Two training seminars – beginning and midterm
Proper anthropometry
Screening programme protocol
Patient referral and evaluation
Deviating patients to be referred to a University Screening Clinic
Screening Clinic – twice a week
Further evaluation as inpatient if needed
Evaluation of the results
GPs divided into two groups based on compliance with the study protocol
Compliant GPs group
Non-compliant GPs group
Evaluation of the results

Results:

24 478 health check visits with anthropometric measurements
• A total of 81 short children found
• 0.35% of all participants
• 11.7% of the expected* – 734 short children

Short children found in the Compliant vs the Non-compliant GPs groups

<table>
<thead>
<tr>
<th></th>
<th>Compliant GPs group</th>
<th>Non-compliant GPs group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health check visits</td>
<td>11423</td>
<td>13055</td>
</tr>
<tr>
<td>Short children</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Previously investigated for short stature</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>% of expected</td>
<td>21.8%</td>
<td>2.97%</td>
</tr>
<tr>
<td>Evaluated at the University Screening Clinic</td>
<td>30</td>
<td>2</td>
</tr>
</tbody>
</table>

University Screening clinic assessment
• 39.5% (32 children) of the 81 found short showed up
• Compliance GPs group
• 30 children
• 42% of those found to be short
• Non-compliance GPs group
• 2 children
• 18.2% of those found to be short

Full anthropometric data, available for 2552 health-check visits**

<table>
<thead>
<tr>
<th></th>
<th>Children with deviations</th>
<th>boys</th>
<th>girls</th>
<th>% of investigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short stature</td>
<td>28</td>
<td>20</td>
<td>8</td>
<td>1.09%</td>
</tr>
<tr>
<td>Tall stature</td>
<td>204</td>
<td>103</td>
<td>101</td>
<td>7.99%</td>
</tr>
<tr>
<td>Tall stature + obesity</td>
<td>82</td>
<td>42</td>
<td>40</td>
<td>3.21%</td>
</tr>
<tr>
<td>Tall stature without obesity</td>
<td>122</td>
<td>60</td>
<td>62</td>
<td>4.78%</td>
</tr>
<tr>
<td>Overweight/obese</td>
<td>180</td>
<td>52</td>
<td>71</td>
<td>7.05%</td>
</tr>
<tr>
<td>Increased WC</td>
<td>233</td>
<td>108</td>
<td>125</td>
<td>9.13%</td>
</tr>
</tbody>
</table>

** all visits in the Compliant GPs group

Additional evaluation as inpatient
• 12 children referred
• 9 children showed up
• 4 with constitutional delay of growth and puberty
• 3 with syndromic short stature
• 2 with GH deficiency

Percentage of the newly diagnosed children with short stature was higher in the Compliant GPs group. Only 38.5% of all the newly found short children showed up for evaluation.

Additional 2 children from the studied group were not referred by their GPs and came to the Clinic through self-found information.

Conclusion: This screening strategy proved as inefficient. The large share of non-attendance and assessment refusal shows that future strategies with media advertising might prove more beneficial. The tendency towards tall stature might be due to the use of growth curves for a foreign population, underlining the importance of introduction of local anthropometric data. Our data supports the worldwide tendency towards increased weight and waist circumference.

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