INTRODUCTION

• The prevalence of autism spectrum disorders (ASD) is much higher than previously estimated, affecting as many as 1 in 40 children.
• Guidelines of the AAP recommend routine screening for developmental disabilities and ASD in preschool children.
• There is mounting evidence that early intervention improves outcomes for children and their families in terms of behavioral, social and cognitive competence.

METHODS

• While the MCHAT has excellent sensitivity and specificity, little is known about the accuracy of other more general developmental screening measures in identifying ASD.
• The advantage of using broad-band screening tools is that physicians are more familiar with them, overcoming the barrier of having to introduce a new testing method.
• However, before these tests can be recommended, it is important to determine their accuracy in correctly classifying children with autism.

The purpose of this study was to:

• Evaluate the clinical utility of this brief parent-administered screening tool in primary care settings.

ABSTRACT

Objectives: To compare the sensitivity and specificity of five commonly used broadband developmental screening measures, the Ages and Stages Questionnaires (ASQ;at 30 months), the Preschool Language Scales (of preschool language scale IV), the Rourke Baby Record (Rourke), the Parents’ Evaluation of Developmental Status (PEDS), and the Munchen Child Autism Screening Test (MCHAT) for the detection of autism spectrum disorder. Methods: This study was approved by the institutional review board of BC Children’s Hospital. Each of the broadband screening tools was administered in a primary care setting. The sensitivity and specificity of the broadband screening tools were calculated using the criteria set out in the MCHAT. Results: Of the 334 children aged 12 to 60 months referred for primary care assessment, 34 children met criteria for a developmental delay. Of these, five children (1%) were identified as having ASD. Conclusions: The MCHAT had 100% sensitivity and specificity for screening for ASD.

RESULTS

Figure 1. Accuracy of the MCHAT in Detecting Autism in Children

Table 1. Characteristics of All Participating Children with and without Autism Spectrum Disorder

<table>
<thead>
<tr>
<th></th>
<th>All Children</th>
<th>Children Diagnosed with ASD (n=34)</th>
<th>Children Diagnosed with ADHD (n=17)</th>
<th>Comparison, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>3.5 (±1.7)</td>
<td>3.6 (±1.5)</td>
<td>3.4 (±1.8)</td>
<td>ns</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>17 (50%)</td>
<td>30 (59%)</td>
<td>23 (57%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>17 (50%)</td>
<td>5 (41%)</td>
<td>15 (46%)</td>
</tr>
</tbody>
</table>

CONCLUSION

• Approximately 1.1% of individuals presenting for routine primary care were identified as having autism spectrum disorder.
• The MCHAT had 100% sensitivity and specificity for the detection of autism spectrum disorder.
• The MCHAT follow up interview increased specificity to 98%.
• All of the broadband screening measures had high sensitivity (100%).
• However, most of the general developmental screening measures - the ASQ, PEDS, and NDDS, had low specificity, indicating that there will be a significant number of false positives if these tests are widely used in clinical practice.
• Although the Rourke had moderate specificity, the study did not have sufficient power to find significant differences between this and the other tests, suggesting that further study on this tool is needed.
• Given the low specificity of the broadband screening tests, a positive screen should be followed up with administration of the MCHAT, MCHAT-2, or more detailed assessment to confirm the findings.
• These findings support current recommendations for routine use of broadband developmental screening tests in all children, with targeted screening using autism specific screening (MCHAT) for those with abnormal results.