Predictors of HRQoL in Children and Adolescents with JIA

Results from a Web-based Survey

ACR 2011 Chicago

Lotte Haverman¹, Martha Grootenhuis¹, Marion van Rossum²
¹Psychosocial Dept and ²Dept Pediatric Rheumatology
Emma Children’s Hospital AMC
Amsterdam, The Netherlands

I have no financial or other relationships to disclose

The study was financially supported by Agis Health Insurance and Pfizer

Health-Related Quality of Life

Quality of life defined by the World Health Organization (WHO), 1996
“individuals’ perceptions of their position in life in the context
of the culture and value systems in which they live and in
relation to their goals, expectations, standards and concerns”

HRQoL incorporates measures of:
• physical symptoms
• functional status
• disease impact on psychological and social functioning

HRQOL in children with JIA

Treatment of JIA patients is aimed at controlling pain and achieving inactive disease by means of medication and multidisciplinary treatment in order to optimize HRQoL
- Studies report that children with JIA have a lower HRQoL compared to healthy children (e.g. Shaw, 2006) and to children with other chronic diseases (e.g. Varni, 2001)
- Other studies suggest that JIA does not affect HRQoL (e.g. Bertamino, 2010)

Comparison between studies is hampered because of e.g. heterogeneity of age cohorts and recruitment protocols

Aims

1) To assess the HRQoL in a group of children and adolescents with JIA in the Netherlands and compare the HRQoL scores to the Dutch norm population and children with other chronic diseases.
2) To assess the predictors (medical and psychosocial) of HRQoL in children with JIA

Medical risk factors identified so far for impaired HRQoL:
- short disease duration
- high pain scores
- poly-arthritis
- high disease activity scores
- low functional ability

These medical factors do not fully explain HRQoL in children with JIA
Patients

All JIA patients visiting the outpatient pediatric rheumatology clinics in Amsterdam were eligible in the period between Feb '09 and March '10 and were asked to fill out the web-based survey before the clinic visit:

- 6 - 18 years old
- 67% participated
- N = 152

Measurements

Pediatricians report
- Type of JIA
- Disease duration
- VAS disease activity
- Number of active joints
- Use of Medication
- Body Mass Index

Patients report
- Age
- Parental country of birth
- CHAQ total score
- VAS pain score
- VAS well being
- Subject burden of medication use
- School absence

HRQoL:
- Pediatric Quality of Life Inventory
- Generic
- ‘past week’ version

Statistics

- Comparison of HRQoL scores with Dutch norm* (t-tests)
- Comparison of HRQoL scores with children with a chronic disease (asthma, congenital defect, skin disease and migraine)* (t-tests)
- Proportion of children at risk of impaired HRQoL (CHI²)
- Predictors of HRQoL (linear regression analyses)

* The data of the Dutch norm population and Dutch children with chronic diseases were collected in a study by Engelen et al. 2009

Methods

The data of the Dutch norm population and Dutch children with chronic diseases were collected in a study by Engelen et al. 2009

Patients I

<table>
<thead>
<tr>
<th>JIA subtype</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oligo-articular JIA, persistent</td>
<td>30</td>
<td>19.7</td>
</tr>
<tr>
<td>Oligo-articular JIA, extended</td>
<td>21</td>
<td>13.8</td>
</tr>
<tr>
<td>Poly-articular JIA, RF negative</td>
<td>66</td>
<td>43.4</td>
</tr>
<tr>
<td>Poly-articular JIA, RF positive</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>Systemic JIA</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>Enthesitis related Arthritis</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>Undifferentiated JIA</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td></td>
</tr>
</tbody>
</table>

Patients II

<table>
<thead>
<tr>
<th>Gender (female)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>67.1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (mean years, SD)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>152</td>
<td>13.03 (3.4)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parental country of birth (Netherlands)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>80.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disease duration (median, range years)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>181</td>
<td>3.62 (0.28-14.82)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physician disease activity (median, range VAS)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>181</td>
<td>17.00 (0-94)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medication at time point of evaluation</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No medication</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>80</td>
<td>52.6</td>
</tr>
<tr>
<td>DMARDS (incl. methotrexate, sulfasalazine)</td>
<td>120</td>
<td>78.9</td>
</tr>
<tr>
<td>Biologicals (Anti-TNF) with or without DMARDS</td>
<td>22</td>
<td>14.5</td>
</tr>
</tbody>
</table>

HRQoL 6-7 years old (proxy)

Results

- *p<0.05; **p<0.01; ***p<0.001
Results

HRQoL 8-12 years old (self)

Norm
N = 192
Chronic Disease
N = 26
JIA
N = 63

*p<0.05; **p<0.01; ***p<0.001

HRQoL 13-18 years old (self)

% of children with impaired HRQoL

*p<0.05; *p<0.01; ***p<0.001

Predictors of HRQoL in JIA

<table>
<thead>
<tr>
<th>Age</th>
<th>Total score</th>
<th>Psychological health</th>
<th>Physical health</th>
<th>Emotional functioning</th>
<th>Social functioning</th>
<th>School functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>.10</td>
<td>.19</td>
<td>.04</td>
<td>.24</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease activity</td>
<td>.05</td>
<td>.08</td>
<td>.01</td>
<td>.13</td>
<td>.04</td>
<td>.02</td>
</tr>
<tr>
<td>Use of medication</td>
<td>.10</td>
<td>.12</td>
<td>.04</td>
<td>.06</td>
<td>.05</td>
<td>.17</td>
</tr>
<tr>
<td>Body mass index</td>
<td>.13</td>
<td>.15</td>
<td>.07</td>
<td>.21</td>
<td>.17</td>
<td>.01</td>
</tr>
<tr>
<td>CHAQ total score</td>
<td>.16 ***</td>
<td>.21</td>
<td>.09</td>
<td>.31</td>
<td>.12</td>
<td>.19</td>
</tr>
<tr>
<td>CHAQ pain score</td>
<td>.16 ***</td>
<td>.19</td>
<td>.12</td>
<td>.20</td>
<td>.32</td>
<td>.13</td>
</tr>
<tr>
<td>Parental education</td>
<td>.05</td>
<td>.04</td>
<td>.05</td>
<td>.00</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Missing days at school</td>
<td>.19</td>
<td>.22</td>
<td>.11</td>
<td>.06</td>
<td>.14</td>
<td>.23***</td>
</tr>
<tr>
<td>R²</td>
<td>.07</td>
<td>.41</td>
<td>.81</td>
<td>.11</td>
<td>.35</td>
<td>.26</td>
</tr>
<tr>
<td>F</td>
<td>19.20***</td>
<td>6.19***</td>
<td>4.12***</td>
<td>4.56***</td>
<td>5.00***</td>
<td>3.39***</td>
</tr>
</tbody>
</table>

*p<0.05; *p<0.01; ***p<0.001

In conclusion

• HRQoL of JIA patients is lower than that of healthy children and lower than that of children with other chronic diseases (asthma, congenital defect, skin disease and migraine).

• Approximately half of the JIA patients have an impaired HRQoL.

• Important predictors of impaired HRQoL are:
  • physical ability
  • pain
  • school absence
  • subjective burden of medication use
Acknowledgements

Pediatric rheumatologists Amsterdam
Koert Dolman
Mira van Veenendaal
Marion van Rossum
Merlijn van de Berg
Joost Swart

Psychosocial KLIK team:
Lotte Haverman
Hedy van Oers
Martha Grootenhuis

Thank you