Evaluation of parents’ compliance in the treatment of cystic fibrosis children

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Introduction: Studying of various aspects of interaction doctor–parents–patient is one of the most actual problems in paediatrics. To assess patient compliance a variety of methods are used. The most effective, non-invasive and fastest for practical medicine is the questionnaire method.

The aim of our work was to find correlations between different aspects of compliance to treatment concerning parents of children with CF and to evaluate overall compliance both at general and individual levels.

Methods: 58 parents whose children suffer from CF were surveyed. The survey was conducted by interview, with using of developed questionnaire which includes 31 questions. Statistical analysis carried out in the environment for statistical computing R 3.0.3

Results: We assume the values of the compliance score <70% as a low level of compliance, the values from 70% to 90% – medium level and above 90% – high level. 24% of respondents were having low level of compliance, 50% medium, and 26% high.

Conclusions: The questionnaire and the results of his application will help to practitioners to find answers on various questions about the collaboration with patients and to understand the behavior of families with CF child.

Adherence to medications in cystic fibrosis patients: a five-year retrospective analysis

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Objectives: Adherence to medications in cystic fibrosis (CF) is poor. Studies demonstrated adherence rates of 40–50%. Poor adherence has been associated with lower lung function studies (PFTs) and greater frequency of pulmonary exacerbations.

Methods: A retrospective review of prescription refill data over 5 years was conducted for several CF medications. Adherence was defined as having refilled at least 75% of the prescribed medications. PFTs, body mass indices (BMI) and hospitalization rates over the study period were collected.

Results: Refill data were obtained for 177 patients, divided into 3 groups: (1) 0–5 years, (2) 6–12 years, (3) 13–21 years. Groups 1 and 2 had higher PFTs at baseline (p < 0.0003) and over the course of the study (p < 0.0001). Group 1 had an increase in PFTs over time, Group 2 had a decline (p < 0.003). Adherence was highest in Group 1 (p = 0.011). Adherence to hypertonic saline (IHS) was significantly higher in Groups 1 and 2 compared to Group 3 (p = 0.028). Adhering to IHS resulted in a significant improvement in BMI percentile after controlling for age, gender and time (p = 0.029). There was a trend towards improved adherence to Pulmozyme in Group 1 compared to other groups. There was a decrease in adherence to vitamins over time in all age groups (p = 0.007).

Conclusion: Age was a strong predictor of adherence, with group 1 having better adherence. IHS and PE resulted in improved BMI. IHS improved PFT. TOBI use was associated with lower PFTs and BMI, likely due to patients being sicker.

The impact of disease severity and clinical variation on self-reported adherence

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Objectives: We have previously shown that coefficient of variation (CoV) FEV1 is a self-reported measure of adherence, but that disease severity is not. The aim of this study was to determine whether the level of self-reported adherence alters according to disease severity and investigate the relationship between clinical variation and disease severity.

Methods: Patients were classified as Band1/1A [6%], 2 [21.6%], 2A [41.8%], 3 [19.6%]; 4 [9.1%]; 5 [2.8%] according to national standard criteria and self-reported adherence noted from a previous study (CFQR self-report). Coefficients of variation for FEV1, weight and CRP were calculated from all contact points over the previous year and days iv therapy were noted. All measures were compared across disease severity bandings (ANOVA one-way).

Results: Differences across Bands were demonstrated for all parameters. Self-report adherence did not show a consistent trend, although iv antibiotic treatment, CoV weight and FEV1 increase with severity. Band 4 had the lowest self-report adherence and highest variation in CRP.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Band 1</th>
<th>Band 2</th>
<th>Band 2A</th>
<th>Band 3</th>
<th>Band 4</th>
<th>Band 5</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of variation</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FEV1 (%)</td>
<td>67.5±5.5</td>
<td>13.2±7.5</td>
<td>9.0±5.5</td>
<td>15.1±8.6</td>
<td>17.5±4.6</td>
<td>18.2±11.7</td>
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</tr>
<tr>
<td>weight (%)</td>
<td>2.3±1.9</td>
<td>2.0±1.6</td>
<td>2.3±1.6</td>
<td>3.2±1.2</td>
<td>5.4±.69</td>
<td>5±1.9</td>
<td>p = 0.066</td>
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<tr>
<td>CRP (%)</td>
<td>35.0±155</td>
<td>31.0±456</td>
<td>41.0±47</td>
<td>47.8±468</td>
<td>49.6±466</td>
<td>47.5±358</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>IV days (days)</td>
<td>24.5±28</td>
<td>10.9±20.4</td>
<td>21.1±25.5</td>
<td>36.0±30.4</td>
<td>79.5±37.5</td>
<td>96.0±126.0</td>
<td>p &lt; 0.001</td>
</tr>
</tbody>
</table>

Conclusion: Coefficient of variation for clinical markers of disease show significant increasing trends with advancing disease severity. In contrast self-reported adherence decreases from Band 1 to Band 4 and improves in late stage disease suggesting earlier intervention to prevent poor adherence is required.