Adherence to Nebulised Therapies in People with Cystic Fibrosis Starting Elexacaftor/Tezacaftor/Ivacaftor (Kaftrio)

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Introduction Cystic Fibrosis HealthHub (CFHH) is a digital platform in use by 17 adult CF centres in the UK which improves patient self-care by objectively monitoring adherence to nebulised therapies delivered via e-Track nebulisers which record device usage on a central server. This study aimed to objectively measure a perceived decrease in adherence with nebulised therapies following initiation of the Elexacaftor-Tezacaftor-Ivacaftor (Kaftrio) therapy.

Methods We identified all patients on Kaftrio currently enrolled in CFHH who regularly uploaded data for at least 3 months before and after starting Kaftrio. We reviewed documentation on our clinical database of any patient or healthcare professional decision to change therapy during the study period leaving 47 patients included in analysis. 31 patients (65%) reduced their adherence to nebulised therapies following Kaftrio use. Median nebulised therapy adherence dropped from 65% to 42% (p<0.003, Wilcoxon Signed Rank) pre and post Kaftrio introduction respectively (figure 1). Of the 47 patients, 28 (60%) communicated a decision to change therapy with the CF team, while 19 (40%) did not communicate this change.

Discussion Our data demonstrates a reduction in nebulised therapy adherence after Kaftrio initiation. Decisions to reduce adherence were often patient driven and not disclosed to clinicians.

Our findings underline the importance of including objective measures of adherence to inhaled therapies in the design of CFTR modulator studies.

The lack of CFHH uploads for 34 patients highlights the challenges in monitoring adherence in clinical practice; in our experience, these patients were less adherent to treatment.

We plan to conduct a qualitative study to explore factors influencing patient decisions to stop or continue medication.

Abstract Table 1 Measured values at baseline and after 6 months’ treatment.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>6 months</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppFEV1 (%)</td>
<td>24.8 (7.13)</td>
<td>33.4 (10.33)</td>
<td>8.6^3</td>
</tr>
<tr>
<td>BMI</td>
<td>21.3 (4.13)</td>
<td>23.9 (4.29)</td>
<td>2.6^3</td>
</tr>
<tr>
<td>RSI</td>
<td>15 (10.75–23)</td>
<td>5 (2.25–7)</td>
<td>10^3</td>
</tr>
<tr>
<td>HARQ</td>
<td>26.5 (16–39)</td>
<td>7 (3.75–12.25)</td>
<td>19.5^3</td>
</tr>
<tr>
<td>SNOT-20%</td>
<td>36.5 (22–42)</td>
<td>20 (10–31.25)</td>
<td>16.5^3</td>
</tr>
</tbody>
</table>

1 mean (Standard Deviation)
2 median (IQR)
3 p<0.001 ppFEV1 – percentage predicted Forced Expiratory Volume in 1 second, BMI – Body Mass Index, RSI – Reflex Symptom Index, HARQ - Hull Airway Reflux Questionnaire, SNOT-20 - Sino-Nasal Outcome Test 20

Abstract Figure 1 Box plot comparing average adherence of nebulised therapy before and after Kaftrio initiation

47 patients included in analysis. 31 patients (65%) reduced their adherence to nebulised therapies following Kaftrio use. Median nebulised therapy adherence dropped from 65% to 42% (p<0.003, Wilcoxon Signed Rank) pre and post Kaftrio introduction respectively (figure 1). Of the 47 patients, 28 (60%) communicated a decision to change therapy with the CF team, while 19 (40%) did not communicate this change.

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