BACKGROUND

- Medication adherence to controller therapy is consistently low, ranging from 30% to 40% in “real-world” practice settings.
- Reasons for nonadherence vary greatly and in addition to general barriers to adherence, there are asthma-specific barriers such as lack of knowledge about appropriate inhaler use and misconceptions about asthma chronically.
- Therefore, interventions to improve adherence to asthma medications need to be tailored to individual patient-level factors as it sets a personalized goal in the patient’s mind.
- Little is known about the effectiveness of the individualized counseling based on identified barriers to adherence conducted by pharmacists.

METHODS

Previously developed tools

Based on established instruments for adherence improvement counseling, three modified patient-centered, asthma-specific tools for community pharmacy practice were developed:

- ASK-12 with asthma-specific questions
- Identify barriers to asthma therapy adherence
- Pharmacist’s booklet “Conversation Starter”
- Assists pharmacists’ counseling
- Educational pamphlet “Breathe easier”
- Provides patients with important information regarding asthma management

OBJECTIVE

Determine if identification of adherence barriers and patient-centered counseling using the developed asthma-specific tools improves medication adherence and asthma control

RESULTS

Comparison of differences in barriers to adherence from pre to post period

<table>
<thead>
<tr>
<th>Score</th>
<th>Pre Period</th>
<th>Barrier present (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>25 (15.3)</td>
<td>70 (42.3%)</td>
<td>0.930</td>
</tr>
<tr>
<td>ACT</td>
<td>26 (16.9)</td>
<td>62 (37.6%)</td>
<td>0.868</td>
</tr>
</tbody>
</table>

Comparison of adherence, asthma control and barrier score between participants in pre and post groups

<table>
<thead>
<tr>
<th>Score</th>
<th>Pre Period</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>15.1 (15.6)</td>
<td>0.055</td>
</tr>
</tbody>
</table>

Comparison of adherence, asthma control and barrier score between participants in pre and post groups

- **Participants’ adherence remained unchanged from pre to post**
- **ACT score increased from 15.135 (pre) to 17.841.9 (post)** which was clinically significant, but not statistically significant
- **The change in total barrier score from pre to post decreased significantly**
- **The most frequently reported adherence barriers item pertains to treatment belief and refers to possession of Asthma Action Plan and knowing the goals of asthma management**
- **Study findings demonstrate that two barriers were resolved over a course of 6 months after the intervention**
- **As for asthma control, the clinically meaningful change of ~3 points may lend support to the effectiveness**
- **Pharmacists were effective in resolving barriers, as adherence barriers scores improved**

DISCUSSION

- **Sample size was limited to 17 patients**
- **Ceiling effect may be a reason for no difference in adherence for pre and post measures**
- **Longer follow-up might result in a significant change in adherence and asthma control**
- **Self-reported adherence and asthma control may be a source of recall bias**
- **Selection bias**
- **Limited generalizability**

LIMITATIONS

- **Inclusion Criteria**
  - Adult patients (≥18 years) with persistent asthma who filled asthma controller medications in participating pharmacies
  - Community pharmacies
  - Positive responses to two screening questions:
    - “Has doctor suggested that you use your inhaler regularly?”
    - “Do you have asthma symptoms most of the time or is it just a seasonal condition?”
  - Willing to provide consent and personal contact
  - Ponieman G, Gatwood L. Limited generalizability
  - Barnes CB, Selection bias
  - Sample size was limited to 17 patients

- **Longer follow-up**
  - **Participants’ adherence remained unchanged from pre to post**
  - **ACT score increased from 15.135 (pre) to 17.841.9 (post)** which was clinically significant, but not statistically significant
  - **The change in total barrier score from pre to post decreased significantly**
  - **The most frequently reported adherence barriers item pertains to treatment belief and refers to possession of Asthma Action Plan and knowing the goals of asthma management**
  - **Study findings demonstrate that two barriers were resolved over a course of 3 months after the intervention**
  - **As for asthma control, the clinically meaningful change of ~3 points may lend support to the effectiveness**
  - **Pharmacists were effective in resolving barriers, as adherence barriers scores improved**

REFERENCES


*Tatiana Makhinova was a PhD candidate at the University of Texas at Austin at the time of project execution