CP-125 - The Effect of a Pharmacist-Led Inhaler Technique Assessment, Education & Training Intervention on Asthma Control in a Paediatric Hospital Outpatient Setting

Kerrane, Michelle1; Hall, Maurice2
1Senior Clinical Pharmacist, Temple Street Children’s University Hospital, Dublin 1
2School of Pharmacy, Queens University Belfast, BT7 1NN

Introduction

According to the Asthma Society of Ireland, Ireland has the fourth highest prevalence of asthma in the world with almost one in ten people having the condition (estimated by the Asthma Society that there are almost 470,000 patients with asthma in Ireland). More than one person a week dies due to asthma.  

Whilst managing paediatric patients with asthma, it is important to consider a holistic view where multidisciplinary team effort is required. A partnership is needed, not just between the child and the healthcare professional, but parents must also be involved to ensure appropriate education, training and management of the condition and symptoms. It is difficult for children to correctly use their inhaler devices, despite popular belief. Therefore it is important that the children are firstly involved in the choice of the inhaler type and secondly, that repeated instruction for inhaler use is given alongside practical demonstration.

It has also been noted by the Asthma Society of Ireland that low levels of proactive symptom control is an issue with adolescent patients. Older adolescents with asthma have a four to six time greater mortality and morbidity rate than younger children.

Methodology

Study Design: A prospective single-centre interventional study

Study Population: Selected from respiratory outpatient clinics which took place in the hospital setting. Patients with a confirmed diagnosis of asthma (documented in medical notes), that had been prescribed inhaler therapy prior to the intervention, were referred to the investigating pharmacist.

Exclusions: Patients with concurrent respiratory conditions were excluded based on potential conflicting factors. Patients under the age of four were excluded as there is no current validated measure of asthma control in these patients.

Study design: analysis: Data was analysed using paired samples t-tests, independent samples t-tests, analysis of variance (ANOVA) with Tukey’s post hoc testing for continuous variables and Pearson product - moment correlation coefficient. (SPSS version 21.0)

Methods: The pharmacist delivered structured inhaler technique assessment and practical training with regard to correct inhaler technique. Additional educational advice was provided and patients were referred for review of inhaler therapy where appropriate.

Primary Outcome: The difference between the patient’s baseline and follow-up Asthma Control Score as assessed by the relevant Asthma Control Test (ACT - 12 years or childhood ACT 4-11 years).

Results

Results (2)

Summary of Significant Results:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Pre</th>
<th>Post</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT (Assisted) v ACT (Self-administration)</td>
<td>1.19</td>
<td>0.93</td>
<td>0.006</td>
</tr>
<tr>
<td>ACT (Unassisted) v ACT (Self-administration)</td>
<td>2.91</td>
<td>2.09</td>
<td>0.046</td>
</tr>
<tr>
<td>Training to吸入器</td>
<td>1.38</td>
<td>1.74</td>
<td>0.233</td>
</tr>
<tr>
<td>Training to吸入器</td>
<td>5.9</td>
<td>6.2</td>
<td>0.11</td>
</tr>
<tr>
<td>Technique (Assisted) v Technique (Self-administration)</td>
<td>3.66</td>
<td>2.34</td>
<td>0.015</td>
</tr>
<tr>
<td>Technique (Self-administration) v Technique (Self-administration)</td>
<td>1.97</td>
<td>0.37</td>
<td>0.283</td>
</tr>
</tbody>
</table>

The results of this study show that inhaler technique assessment, education and training in a single session by a hospital based clinical pharmacist significantly improved ACT scores (Baseline Score = 19.33±1.312, Follow-up Score = 21.73±2.701, p = 0.042) and CACT scores (Baseline Score = 19.50±1.993, Follow-up Score = 21.63±4.647, p = 0.047).

Significant improvements were also noted in the areas of inhaler technique, types of healthcare professionals delivering training to patients, self-administration of inhalers versus assisted administration and variations according to gender.

Results (3)

This study shows feasibility and potential for clinical pharmacists in the hospital healthcare setting to provide inhaler technique assessment, education and training for patients with asthma. Further studies with more robust methodology are necessary to validate outcome measures.

Conclusion

This study also provides a unique insight into the paediatric population with asthma in Ireland.