

P156 OVERUSE OF INHALED CORTICOSTEROIDS IN ASTHMA PATIENTS WITH CONCURRENT EXERCISE-INDUCED LARYNGEAL OBSTRUCTION

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Introduction Exercise induced laryngeal obstruction (EILO) causes asthma-like respiratory symptoms (i.e. shortness of breath and wheezing) and EILO is therefore difficult to distinguish from asthma in the clinic, resulting in a diagnostic dilemma in symptom based asthma management. We aimed to elucidate if the symptom contribution from EILO affected treatment strategy in patients suffering from both asthma and EILO compared with patients suffering from asthma only.

Methods We included 28 consecutively referred subjects with verified asthma, of which 11 had concurrent EILO. At baseline and at a one-year follow-up, all subjects underwent a thorough work-up consisting of a detailed clinical interview including asthma medication history, ACQ and mini-AQLQ scores, and diagnostic tests including spirometry, Mannitol and Methacholine bronchoprovocation tests, and fractional exhaled nitric oxide. Further, all subjects underwent a continuous laryngoscopy during exercise (CLE) test verifying the severity or absence of any concurrent EILO.

Results Subjects who suffered from both asthma and EILO were prescribed higher doses of inhaled corticosteroids (ICS) as a result of the baseline work-up ($P = 0.016$) and were reduced in ICS doses at time of follow-up ($P = 0.027$) and reported a significant decrease in ACQ-scores at one-year follow-up ($P = 0.016$). In subjects with asthma only, there were no significant changes in ACQ scores at time of follow up despite of comparable asthma severities between groups at time of referral.

Conclusion EILO is a relevant differential diagnosis when managing patients with respiratory symptoms in a tertiary asthma clinic. Symptoms arising from EILO are difficult to distinguish from asthma symptoms, resulting in an ostensible overuse of ICS in patients with EILO. Further studies are needed to establish the clinical consequences and the optimal treatment strategy in this patient group.

Background Electronic monitoring devices with an audio-visual reminder function can significantly improve asthma inhaler adherence and control in children.¹ However, the relationship between attitudes, patterns of medication use and clinical outcomes are unknown.

Aim To examine individual patterns of inhaled corticosteroid use, and their relationships with clinical outcomes and qualitative feedback in adolescents with asthma.

Methods An exploratory study based on previous qualitative research investigating the attitudes of adolescents with asthma towards inhaler monitoring and data sharing. Patients from a specialist severe asthma clinic had their preventer inhaler use electronically monitored for one-month with a SmartTrack (Nexus6, Auckland, NZ) device. Adherence data was obtained and participants completed a questionnaire and interview at the beginning, middle and end of the trial on their attitudes. Ten months later, participants' case notes were examined for information related to their health before and after the study.

Results Spirometric data was captured on 4/7 participants and is presented alongside adherence data in Table 1. Daily adherence ranged from 67%–93% with the largest FEV1 change (+0.95) observed in P1 who had an average daily adherence of 73%, and the smallest FEV1 change (-0.18) observed in P3 who had an average daily adherence of 93%. All changes occurred without intensification of treatment. This fits with the previous qualitative findings that participants were enthusiastic about the reminders the SmartTrack device provided and felt more conscious of adhering to their treatment plan when they knew someone would be monitoring it. Participants spoke positively for utilising the data to demonstrate their adherence to their parents or doctor.

Conclusions Through examining inhaled corticosteroid use, attitudes and clinical outcomes we gain an understanding of each patient's condition including their habits with their inhaler (e.g. better adherence in the evenings), their attitudes to their asthma treatment and the potential effects of inhaler use on their health. Doing so helps us to identify patients who could benefit from intervention, to improve their inhaler taking behaviour and potentially improve their asthma control.

REFERENCE

1 Chan A, Stewart AW, Harrison J, *et al.* The effect of an electronic monitoring device (...). *Respir Med.* 2015;**3**:210–19

P157 INDIVIDUAL PATTERNS OF INHALER USE AND HEALTH OUTCOMES IN ADOLESCENTS WITH ASTHMA

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P158 THE COST OF STEROID INDUCED MORBIDITY AMONG SEVERE ASTHMA PATIENTS IN THE UK

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Abstract P157 Table 1 Forced Expiratory Volume (FEV1) Spirometry values for four of the seven participants pre and post study

Participant	Pre Study		Study Period			Post-Study		
	FEV1 Value (L)	Days Before Study Start Date	Daily Adherence average (%) mean	AM Adherence average (%) mean	PM Adherence average (%) mean	FEV1 Value (L)	Change in FEV1 after study participation	Days After Study End Date
P1	2.15	28	73	71	76	3.1	+0.95	372
P2	4.76	0	93	97	90	5.43	+0.67	156
P3	2.86	23	93	94	92	2.68	-0.18	69
P4	2.36	118	67	66	68	2.61	+0.25	71