



Temperature-Controlled Laminar Flow Therapy in Children and Young People with Poorly Controlled Asthma

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To the Editor: Children with poorly-controlled asthma remain at increased risk of severe asthma attacks and medication side effects. Most of these children have sensitization to multiple aeroallergens [1], and avoiding these allergens could improve asthma control. Temperature-controlled laminar airflow (TLA) devices provide a novel, non-pharmacological method of reducing aeroallergen exposure. TLA devices utilize a particle filter and ambient air cooler to direct a stream of air with 99.5% fewer aeroallergens towards the sleeping patient [2].

Retrospective data were collected from 12 children (median age 12.75 y with a range of 6–19 y; 6 female) with poorly-controlled allergic asthma who had an Airsonett®Air4 TLA device installed in their home.

Inclusion criteria were children with poorly controlled asthma (defined by an Asthma Control Test (ACT) of less than 19) and requiring a long-acting beta-agonist as well as a leukotriene receptor antagonist to control their asthma. The primary outcome measure was change in ACT at three months.

Median ACT score prior to the installation of TLA was 9.5 (IQR 7.75–11.75). All participants had ACT scores below 20 at baseline, suggesting poorly controlled asthma. After 3 mo of TLA therapy the median ACT score increased to 14.5 (IQR 12–20.25) ($p=0.008$). Using a 3-point increase on the ACT as a significant clinical improvement [3], a small majority (58%) showed improvement at three months.

Our findings suggest that these devices may have some potential as an add-on, nonpharmacological therapy in selected CYP. Some children had a clear improvement in symptoms in contrast to others who did not. It is widely recognized that there are different phenotypes of asthma, and certain phenotypes may be more likely to respond to treatment [4]. Our findings lend weight to the argument for further research, including large prospective RCTs, to be performed on this topic.

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Declarations

Conflict of Interest None.

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