Simple night time airflow control device eases persistent asthma symptoms

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A simple device that filters out airborne asthma triggers during sleep can ease persistent symptoms of the condition during the day and improve quality of life, suggests research published online in *Thorax*.

Temperature controlled laminar airflow treatment, or TLA for short, delivers a constant, slightly cooled airflow in the patient's breathing area, which displaces warmer air containing irritants and allergens, such as house dust mite and pet hairs.

The aim is to stave off the abnormal immune response that triggers a systemic allergic reaction, including the airway narrowing typical of an asthma attack, by preventing the sleeper breathing in the irritants and allergens.

The authors base their findings on 281 non-smokers (either passive or active), aged between 7 and 70, from six European countries. All of them had poorly controlled atopic (allergic) asthma.

Of these, 189 slept with a TLA device (Protexo) just above their bed for a year. The remainder were given a dummy device.

A validated score was used to assess quality of life before and after the 12-month study period, in conjunction with assessments of symptom control, lung capacity, airway inflammation, and biological indicators of a systemic allergic response.

The results showed a significant difference of 14-15% on quality of life scores between those using Protexo and those using the dummy device.

A steeper fall in nitric oxide - an indicator of inflammation - was seen among those using Protexo, and this was particularly noticeable among those with more severe asthma. Those using this device also had significantly smaller increases in another indicator of persistent and more severe inflammation - immunoglobulin E (IgE).

The impact was greatest among those whose asthma required the most medication yet whose symptoms were the most poorly controlled, a group who "represent a significant area of unmet need," say the authors.

Despite advances in the treatment of asthma, the condition is still very distressing for a significant proportion of patients, they explain. Previous attempts to filter or purify airflow have not met with a great deal of success.

"The reason that nocturnal TLA is successful where so many other approaches have failed may be the profound reduction in inhaled aeroallergen exposure, which this treatment achieves," they suggest.

They point to other research suggesting that night time allergen exposure has the greatest impact on symptom severity, possibly because of changes in circulating hormone levels and immune responsiveness prompted by the body's internal clock (circadian rhythms).

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