

Research revelation could shape future long-term treatment of asthma

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A new study reveals that the progressive loss of lung function in asthma sufferers could be entirely independent of the effects of inflammation. The findings have significant implications for the long-term treatment of asthma.

The MRC-funded researchers were from the University of Southampton. The research, which is published in the *New England Journal of Medicine*, challenges the traditional concept that asthma is solely an inflammatory condition.

Dr Peter Howarth, a senior author on the paper from the University of Southampton, says: "Whilst reducing airway inflammation by inhaling steroids, the traditional treatment for asthma, is very effective for most patients, this does not address the long-term airway wall thickening and scarring that takes place in the lungs of individuals with asthma. Known as 'airway remodelling', this can irreversibly affect lung function.

"We have shown that this significant problem can be independent of inflammation, which may explain why steroids are not effective at managing all aspects of asthma."

Researching on 48 asthma suffering volunteers,

the team analysed lung airway remodelling by looking at airway samples (bronchial biopsies) taken from the volunteers before and several days after they underwent breathing tests.

To test whether remodelling was caused by inflammation, the participants were split into four groups. One group had airway narrowing and inflammation temporarily induced, one had just airway narrowing but no inflammation induced, and two control groups had no airway narrowing induced at all. The team found no significant difference in airway remodelling between the first two groups, which led them to their conclusions.

Dr Chris Grainge, lead author of the study from the University of Southampton, adds: "The important clinical implication of this study is that patients should not only receive treatment to reduce inflammation, but also to prevent airway remodelling. Only if this is successful can the long term consequences of the disease be prevented. Asthma currently affects one in five children and one in ten adults in the UK, so it is a very serious burden."

Professor Nick Wareham, Director of the Medical Research Council Epidemiology Unit in Cambridge, comments: "The Medical Research Council has made great progress in understanding how the human body deteriorates when damaged. We support excellent research in tackling the major health challenges facing the UK and the world, including asthma, the incidence of which is increasing world-wide. Such research is very important because it gives us really strong insights into the processes which underpin major diseases."

Provided by Medical Research Council

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