

Low-dose oral theophylline combined with inhaled corticosteroids for people with chronic obstructive pulmonary disease and high risk of exacerbations: a RCT

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Plain English summary

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Plain English summary

Chronic obstructive pulmonary disease (COPD) is a long-term lung disease that cannot be cured. The main symptom is shortness of breath on exertion. In the UK, about 1.2 million people have COPD. It is a major cause of death and costs the NHS > £1B a year. Sudden 'flare-ups' of symptoms often need emergency treatment, shorten life expectancy and reduce people's ability to get on with their lives.

Theophylline is a drug that has been around for decades. In the past, it was used in high doses to treat COPD by opening up airways. However, its benefits were limited and it often caused unpleasant side effects. High-dose theophylline has been replaced by drugs administered by inhalers, such as inhaled corticosteroids (ICSs). Recent work in the laboratory and in animal models suggests that, at low dose, theophylline could make ICSs work better in COPD with none of the side effects of high-dose theophylline.

The Theophylline With Inhaled CorticoSteroid (TWICS) trial tested whether or not adding low-dose theophylline reduces flare-ups in people with COPD taking ICSs. A total of 1578 people with COPD from 121 centres all over the UK took part. Participants were randomly divided into two groups: one group took low-dose theophylline and the other took dummy placebo pills. Participants were asked to attend visits at 6 and 12 months.

A total of 791 participants were prescribed low-dose theophylline and 787 were prescribed dummy placebo pills. Although not everyone took the tablets for a whole year, it was possible to count the number of flare-ups in 98% of those taking part. In total, there were 3430 flare-ups. On average, the people taking low-dose theophylline had 2.24 flare-ups and the people taking placebo had 2.23 flare-ups.

Overall, the trial showed that, for people with COPD, taking low-dose theophylline on top of steroid inhalers makes no real difference.

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