



A real-life comparative effectiveness study into the addition of antibiotics to the management of asthma exacerbations in primary care

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Antibiotics are regularly prescribed for asthma exacerbation; however, there is little clinical benefit to the routine addition of antibiotics to usual OCS treatment for managing asthma exacerbations in primary care patients <https://bit.ly/2LVYbft>

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Abstract

Background Asthma exacerbations are major contributors to asthma morbidity and mortality. They are usually managed with bronchodilators and oral corticosteroids (OCS), but clinical trial evidence suggests that antibiotics could be beneficial. We aimed to assess whether treatment of asthma exacerbations with antibiotics in addition to OCS improved outcomes in larger, more representative routine-care populations.

Method A retrospective comparative effectiveness study into managing asthma exacerbations with OCS alone *versus* OCS plus antibiotics was conducted using the Optimum Patient Care Research Database. The dataset included 28637 patients; following propensity score matching 20024 adults and 4184 children were analysed.

Results Antibiotics in addition to OCS were prescribed for the treatment of asthma exacerbations in 45% of adults and 32% of children. Compared to OCS alone, OCS plus antibiotics was associated with reduced risk of having an asthma/wheeze consultation in the following 2 weeks (children hazard ratio (HR) 0.84 (95% CI 0.73–0.96), $p=0.012$; adults HR 0.86 (95% CI 0.81–0.91), $p<0.001$), but an increase in risk of a further OCS prescription for a new/ongoing exacerbation within 6 weeks in adults (HR 1.11 (95% CI 1.01–1.21), $p=0.030$), but not children. Penicillins, but not macrolides, were associated with a reduction in the odds of a subsequent asthma/wheeze consultation compared to OCS alone, in both adults and children.

Conclusion Antibiotics were frequently prescribed in relation to asthma exacerbations, contrary to guideline recommendations. Overall, the routine addition of antibiotics to OCS in the management of asthma exacerbations appeared to confer little clinical benefit, especially when considering the risks of antibiotic overuse.