Adherence to inhaled corticosteroids and clinical outcomes in mepolizumab therapy for severe asthma

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ABSTRACT

Introduction: Inhaled corticosteroids (ICS) achieve disease control in the majority of asthmatic patients, although adherence to prescribed ICS is often poor. Patients with severe eosinophilic asthma may require treatment with oral corticosteroids (OCS) and/or biologic agents such as mepolizumab. It is unknown if ICS adherence changes on, or alters clinical response to, biologic therapy.

Methods: We examined ICS adherence and clinical outcomes in OCS-dependent severe eosinophilic asthma patients who completed 1 year of mepolizumab therapy. The ICS medicines possession ratio (MPR) was calculated (the number of doses of ICS issued on prescription/expected number) for the year before and the year after biologic initiation. Good adherence was defined as MPR >0.75, intermediate 0.74–0.51 and poor <0.5. We examined outcomes after 12 months of biologic therapy, including OCS reduction and annualised exacerbation rate (AER), stratified by adherence to ICS on mepolizumab.

Results: Out of 109 patients commencing mepolizumab, 91 who had completed 12 months of treatment were included in the final analysis. While receiving mepolizumab, 68% had good ICS adherence, with 16 (18%) having poor ICS adherence. ICS use within the cohort remained similar before (MPR 0.81±0.32) and during mepolizumab treatment (0.82±0.32; p=0.78). Patients with good adherence had greater reductions in OCS dose (median (interquartile range) OCS reduction 100 (74–100)% *versus* 60 (27–100)%; p=0.031) and exacerbations (AER change −2.1±3.1 *versus* 0.3±2.5; p=0.011) than those with poor adherence. Good ICS adherence predicted the likelihood of stopping maintenance OCS (adjusted OR 3.19, 95% CI 1.02–9.94; p=0.045).

Conclusion: ICS nonadherence is common in severe eosinophilic asthma patients receiving mepolizumab, and is associated with a lesser reduction in OCS requirements and AER.