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Effectiveness of initiating biologics in severe asthma patients with high steroid exposure

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Introduction: Real-world evidence on the effectiveness of therapeutic antibodies ("biologics") in patients with asthma is limited.

Aim: To examine the effectiveness of initiating biologics in a large, international, real-world cohort of adult patients with severe asthma (SA) and high oral corticosteroid (OCS) exposure.

Methods: Patients with SA on long-term (maintenance) OCS or ≥4 courses of rescue OCS within a 12-month period were identified (January 2015-February 2021) from the International Severe Asthma Registry (http://isaregistries.org/). Biologic initiators were identified and matched 1:1, using propensity scores, with non-initiators. The impact of biologic initiation (first 365 days) on asthma exacerbations, OCS dose (both total and long-term) and healthcare resource utilization were assessed using generalized linear models.

Results: Among 996 matched pairs, at 365 days of follow-up, biologic initiation was associated with a 69.2% reduction in the number of exacerbations relative to non-initiators (0.64 vs 2.06, p=0.019). Biologic initiators were also 2.20 times more likely than non-initiators to have daily long-term OCS dose below 5 mg (p=0.002) and inclined to be more likely to achieve a high reduction (>75%) in total OCS dose (4.01 times, p=0.063). Initiation of biologics reduced the frequency of asthma-related hospitalizations (reduction: 57.3%, p=0.006) and had a trend towards reduction for emergency department visits (52.2%, p=0.054).

Conclusions: Real-world initiation of biologics is associated with reduced exacerbation rate, OCS exposure, and healthcare resource utilization in patients with severe asthma and high OCS.

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Abbreviations: SA: severe asthma, OCS: oral corticosteroid

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