Impact of Inititing Biologics in Patients With Severe Asthma on Long-term Oral Corticosteroids or Frequent Rescue Steroids (GLITTER): Data From the International Severe Asthma Registry

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Aim and Methods

Aim

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

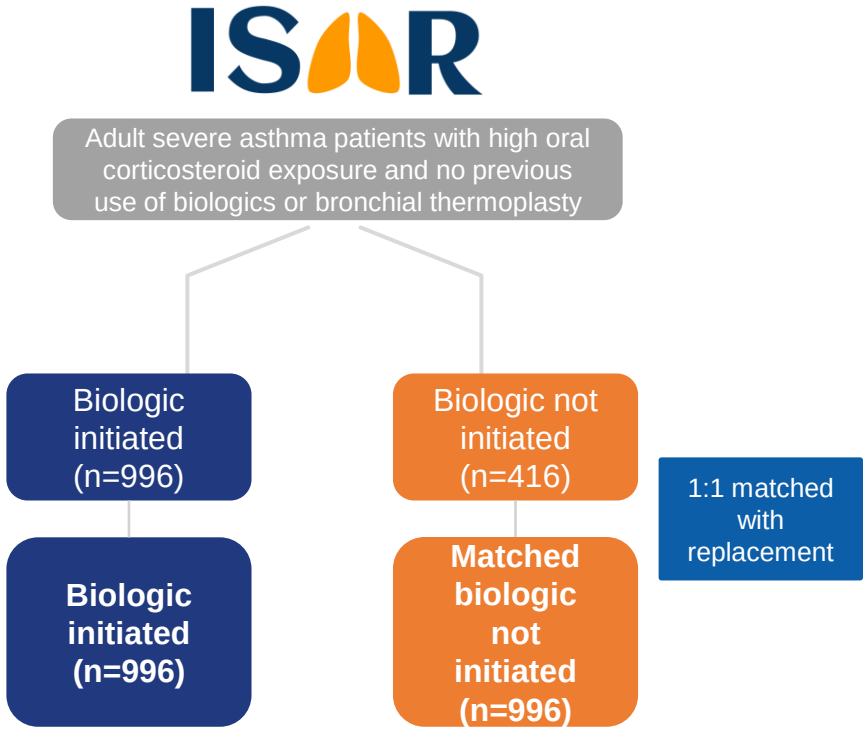
Outcomes

Primary outcome: reduced rate of asthma exacerbations

Secondary outcomes

- improvement in asthma control
- reduction in OCS dose
- reduced number of asthma-related emergency department visits and asthma-related hospital admissions

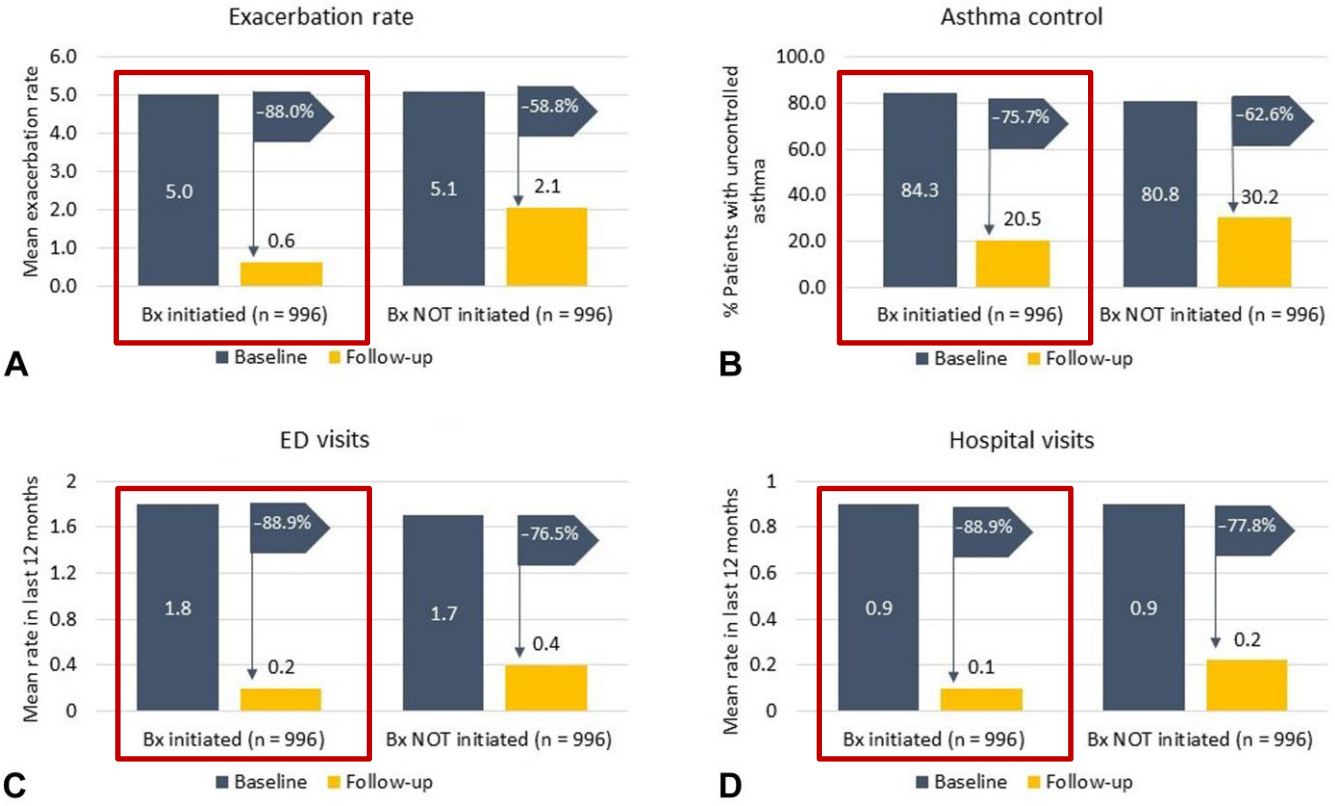
Outcomes were estimated over a 12-month follow-up period.



*HOCS was defined as long-term OCS ≥1 year or ≥4 courses of rescue OCS within a 12-month period in the current study.

Chen, W, Tran, TN, et al. *J Allergy Clin Immunol Pract.* 2023. doi: 10.1016/j.jaip.2023.05.044.

Change from baseline in exacerbation rates, asthma control, emergency department visits, and hospital visits



Patients who initiated a biologic experienced an **88.0% reduction** in exacerbation rates, an **89% reduction** in emergency department visits and hospital visits, and a **76% reduction** in asthma control in the 12-month follow-up period.

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Effectiveness of biologic initiation vs non-initiation on OCS reduction

Outcome	Biologic not initiated	Biologic initiated	Marginal difference in % probability (95% CI)	Relative risk (95% CI)
Total OCSs				
Increased dose (%)	27.6	16.0	−11.6 (−29.8 to 6.7)	0.51 (0.17 to 1.51)
Low reduction (%)	63.6	54.4	−9.2 (−24.8 to 6.4)	0.87 (0.61 to 1.24)
Moderate reduction (%)	5.5	16.2	10.7 (4.2 to 17.3)	3.82 (1.58 to 9.25)
Optimal reduction (%)	3.3	13.4	10.0 (−0.6 to 20.7)	7.73 (0.71 to 84.27)
Long-term OCSs				
Increased dose (%)	14.3	8.6	−5.7 (−18.0 to 6.5)	0.51 (0.12 to 2.17)
Low reduction (%)	73.6	68.5	−5.1 (−22.5 to 12.3)	0.94 (0.69 to 1.28)
Moderate reduction (%)	4.2	8.9	4.8 (−1.7 to 11.2)	2.55 (0.78 to 8.37)
Optimal reduction (%)	7.9	14.0	6.1 (−7.7 to 19.9)	4.16 (0.21 to 82.18)

Patients who initiated a biologic were **2.48 times more likely** to achieve a daily total OCS dose of <5 mg compared with those who did not (estimated risk probability of 38.0% vs 15.3%; P = .011) and **2.20 times more likely** to achieve a daily long-term OCS dose (i.e., maintenance dose only) of <5 mg (risk probability, 49.6% vs 22.5%; P = .002).

Compared with those who did not initiate a biologic, those who initiated a biologic were **7.73 times more likely** to have an optimal (>75%) total OCS reduction.

OCS = oral corticosteroids

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Effectiveness of biologic initiation vs non-initiation on healthcare resource utilisation

Outcome	Biologic not initiated	Biologic initiated	Marginal difference in % probability (95% CI)	Relative risk (95% CI)
ED Visits				
Risk of ED visit (%)	14	6	−9 (−14, −3)	0.35 (0.21, 0.58)
Hospitalisation				
Risk of hospitalization (%)	12	5	−7 (−10, −3)	0.31 (0.18, 0.52)

Compared with patients who did not, patients who initiated a biologic had approximately **one-third the risk and frequency** of asthma-related emergency department visits and hospitalizations (i.e., serious exacerbations).

ED = emergency department

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Conclusions

In a real-world setting, keeping severe asthma patients on HOCS or initiating biologics can both result in improvements in severe asthma.

However, HOCS **patients who received biologics experienced the combined benefit of improvements in health outcomes** (including exacerbation rates, and healthcare resource utilization) whilst being able **to reduce high levels of both short- and long-term oral steroid exposure.**

HOCS = high oral corticosteroid exposure

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