

Real-life biomarker response to anti-IL5/5R and anti-IgE therapies in severe asthma patients

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Poster #2136

Introduction

- Biologic treatments (anti-IL4, anti-IL5/5R, and anti-IgE) are known to decrease biomarker values^{1,2,3,4}; however, the extent to which this occurs in patients with severe asthma is incompletely understood.
- This study focused on the extent to which BEC, FeNO, and serum IgE values were affected by the initiation of anti-IL5/5R and anti-IgE therapies.

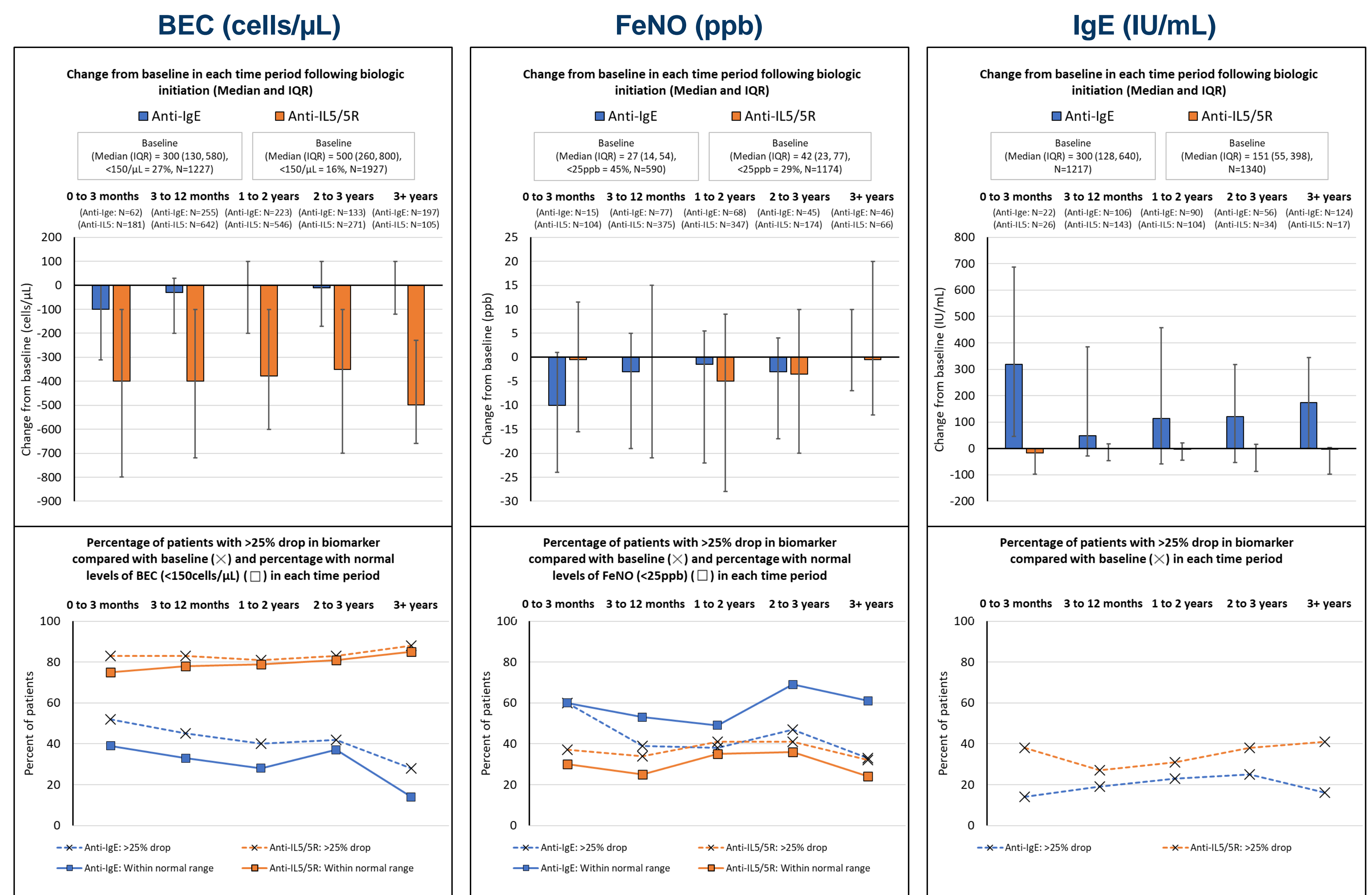
Aim

- To assess the proportion of patients with severe asthma whose biomarkers (BEC, FeNO, and serum IgE) decrease following anti-IL5/5R or anti-IgE initiation.

Methods

- Patients in the International Severe Asthma Registry (ISAR) that received biologic therapy (anti IgE or anti-IL5/5R) and had biomarker data available at or before, and after initiation of biologics were included.
- Highest biomarker measurement in the year preceding biologic initiation was used as the baseline biomarker measure.
- Highest biomarker measurements in each time period (0-3, 3-12 months, 1-2, 2-3 and >3 years) after biologics initiation were used as the values for follow-up.
- The change between baseline and follow-up was assessed as median (IQR) change in the raw biomarker measurements and the percentage of patients with a >25% decrease compared to baseline in each time period.
- The percentage of patients with biomarkers within normal levels (BEC <150 cells/μL; FeNO <25 ppb) in each time period following biologics initiation was also assessed.

Figure 1- Biomarker changes compared with baseline, at different times after initiation of biologic therapy



Results

- A marked decrease in BEC occurred within 3 months with anti-IL5/5R patients which was sustained over the 3-year follow-up. Anti-IgE was associated with a smaller and shorter term decrease in BEC.
- At 2-3 years 83% of anti-IL5/5R and 42% of anti-IgE patients had >25% decrease in BEC.
- In the first 3 months, FeNO decreased most with anti-IgE, however this decrease reduced over time. At 2-3 years FeNO had decreased by >25% in 41% of anti-IL5/5R and 47% of anti-IgE patients.
- At 2-3 years, total serum IgE had decreased by >25% in 38% of anti-IL5/5R and 25% of anti-IgE patients compared with baseline. However, most anti-IgE patients experienced an increase in total serum IgE in the 3 years following biologic initiation.

Conclusions

- BEC decreased to a greater extent after anti-IL5/5R than after anti-IgE.
- Both classes of biologic were associated with a moderate reduction in FeNO.
- The increase observed in total IgE (consisting of bound + unbound IgE) suggests there may be a complex association between anti-IgE treatments and partitioning of total serum IgE.
- Further research is needed into whether limited reductions in biomarkers in clinical practice are also associated with reduced effectiveness of biologics, and how biomarker values change with long term use of biologic therapy.

References

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Acknowledgements

Writing, editorial support, and/or formatting assistance in the development of this poster was provided by Joash Tan, BSc (Hons), of the Observational and Pragmatic Research Institute, Singapore, which was funded by AstraZeneca.

Disclosures

This study was conducted by the Observational and Pragmatic Research Institute (OPRI) Pte Ltd and was partially funded by Optimum Patient Care Global and AstraZeneca Ltd. No funding was received by the Observational & Pragmatic Research Institute Pte Ltd (OPRI) for its contribution. **Presenter's conflict of interest disclosure: John Townend's** full COI disclosures can be found in "COI disclosures" QR



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Audio Summary



Presented as a poster presentation at European Respiratory Society International Congress 2022, Barcelona, 04– 06 September 2022. Copyright © 2022 (OPRI/AstraZeneca). All rights reserved.