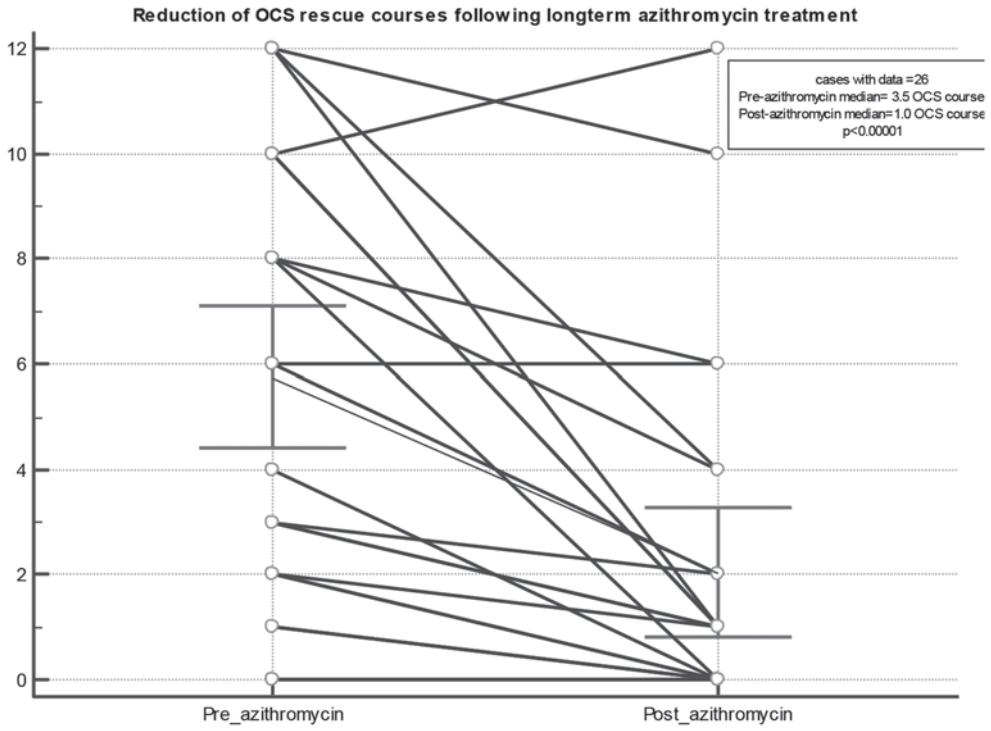


**Abstract S66 Figure 1**

response, whilst 11 patients (23.9%) discontinued due to lack of benefit (n=8) or side effects (n=3).

**Conclusion** Long-term azithromycin therapy improved clinical outcomes in this sub-population of severe asthma of infective phenotype with acceptable safety profile. Further research is warranted to confirm these findings.

## REFERENCE

1. *The Lancet*. doi:10.1016/s0140-6736(17)31281-3

## S67 PERSISTENT FREQUENT EXACERBATORS: A SUBTYPE OF SEVERE ASTHMA

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**Introduction and Objective** Frequent exacerbations (≥2 exacerbations in the past year) is a prognostic factor in severe asthmatics and is associated with increased morbidity and mortality. Using clinical and transcriptomic data, we sought to characterise a clinical subtype of asthma associated with persistent frequent exacerbations (PFE) which is defined by frequent exacerbations for minimum 2 consecutive years.

**Methods** Baseline and longitudinal clinical and transcriptomic data from 311 severe asthmatics from the U-BIOPRED study was analysed to find distinct clinical characteristics of the PFE group. The longitudinal data was collected 12–18 months after the baseline visit. We also sought to annotate the PFE group with gene set variation analysis (GSVA) using gene signatures associated with active viral infection and immune response.

**Results** Out of 311 patients, 193 were frequent exacerbators (FE) at baseline. 109 (56.5%) of FE subjects at baseline remained FE at the longitudinal follow-up and were designated PFE. This group of patients had earlier-onset of asthma (25 [28] yrs vs 28 [33] yrs, median [interquartile range]), higher BMI (30.3±6.8 vs 28.4±5.3 kg/m$^2$, mean ±SD) and higher eczema diagnosis (37.61% vs 28.22%) compared with infrequent and non-persistent exacerbators. However, they had lower atopy positive blood tests(57.80 vs 68.32%). These patients also had poor lung function and lower airway conductance with a lower mean Sgaw (0.72±0.6 vs 0.99±0.8, mean ±SD). The number of subjects taking oral corticosteroids (60.2 vs 37.6%) and xanthines (34.3 vs 12.6%) was greater in the PFE group. PFE patients were more poorly controlled (ACQ; 2.7±1.2 vs 2.0±1.1, mean ±SD) and had a worse quality of life (AQLQ; 4.2±1.1 vs 4.6±1.3, mean ±SD) with higher anxiety and depression (HADS; 14.0 ±7.9 vs 12.1±8.2, mean ±SD). GSVA analysis identified gene signatures associated with an active viral response to be differentially enriched amongst the PFE in nasal brushing samples.

**Conclusion** This study identified a group of asthmatics, defined by PFE who have poorly managed and difficult-to-treat asthma. It also identified a potential role of the minimally invasive nasal brushing sample to identify PFE and thus allow for early intervention and improvement in the morbidity and mortality in this group of patients.