were conducted to determine the correlation between *in vitro* CS sensitivity and different clinical parameters.

Results There was no difference in baseline or LPS-induced cytokine release from PBMCs between the two groups. The inhibition of TNF-α release by DEX was significantly diminished in children with asthma compared to healthy controls at 10^{-8} M concentration ($p = 0.018$) but no differences were noticed at 10^{-6} M concentration, or on LPS-induced IL-8 production. A significant inverse correlation between% inhibition of TNF-α and body mass index (BMI) at 10^{-8} M (r=-0.84, $p = 0.02$) and 10^{-6} M DEX (r=-0.82, $p = 0.02$) was found.

Conclusions Our results show the existence of an impaired CS sensitivity in PBMCs from children with severe asthma, suggesting that these cells can be used for mechanistic investigations. Interestingly, we observed a negative correlation between CS sensitivity and BMI, a novel *in vitro* finding which supports the association between overweight/obese asthmatic children and a decreased clinical response to CS therapy. Together, these results merit further studies with a larger sample size.

REFERENCES

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S132 SPUTUM AND BRONCHIAL BIOPSY EXPRESSION OF 8-OXO-7, 8-DIHYDRO-2′-DEOXYGUANOSINE (8-OXODG) IN ASTHMA IS RELATED TO NEUTROPHILIC INFLAMMATION AND POOR ASTHMA CONTROL

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Introduction and objectives Oxidative stress has been implicated in the pathogenesis of asthma. Validated sputum biomarkers are required to assess this and its relationship to other clinical variables.

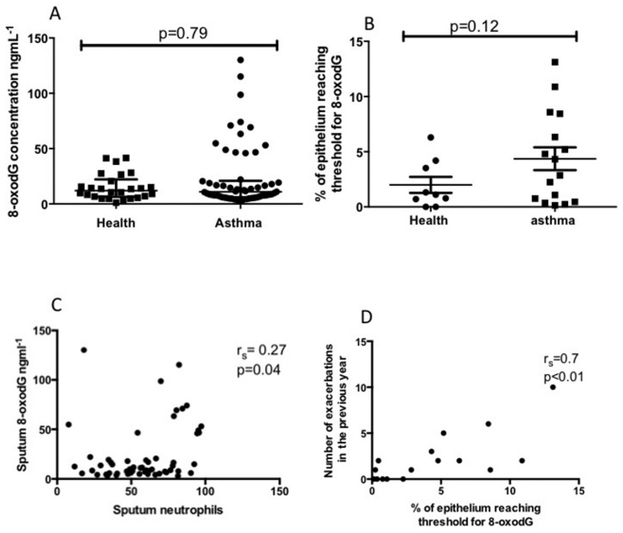
We sought to compare sputum and bronchial 8-oxodG expression in asthma and health; assess the sputum repeatability; and explore its relationship with induced sputum inflammatory cells counts and exacerbations.

Methods Asthmatics and healthy controls were recruited from a single centre and underwent clinical characterisation including sputum induction (asthma n = 58, health n = 27) and bronchial biopsy (asthma n = 16, health n = 10).

Sputum and epithelial 8-oxodG expression was measured by ELISA and Immunohistochemistry respectively. Sputum asthmatics were assessed at a repeat stable visit at 6 months.

Results Between health and asthma, there were no significant differences in the median (IQR) sputum 8-oxodG levels [12 (16) $ngml^{-1}$ vs. 11 (15) $ngml^{-1}$, p = 0.36] or the mean (SEM) percentage area of epithelium reaching threshold intensity for 8-oxodG [2.0 (0.7)% vs. 4.4 (1.0) %, p = 0.12].

Asthma sputum 8-oxodG correlated with the sputum total cell count (r_s=0.53, p < 0.01), sputum neutrophils (r_s=0.27, p = 0.04), sputum macrophages (r_s=-0.31, p = 0.02) and serum IgE (r_s=-0.27, p = 0.04). Epithelial 8-oxodG correlated to the number of exacerbations in the previous year (r_s=0.70,p < 0.01) and the ACQ 6 (r_s=-0.52,p = 0.04).



Abstract S132 Figure 1 Scatter plots of A) Sputum 8-oxodG in health vs. asthma; B) Epithelial 8-oxodG in health and asthma; C) Sputum 8-oxodG vs. sputum neutrophils and D) Epithelial 8- oxodG vs. the number of exacerbations in the previous year.
Spearman's rank correlation coefficients are also given. Comparisons were made using t tests and Mann Whitney U tests for parametric and non-parametric data respectively

The upper 95th confidence interval of sputum 8-oxodG and epithelium 8-oxodG reaching threshold in healthy controls was used to split asthma patients into 8-oxodG ^{high} and ^{low} groups. The sputum 8-oxodG^{high} group (n = 13) had significantly higher sputum total cells 8.08 [8.41] x10^6 g^{-1} vs. 2.25 [2.91] x10^6 g^{-1}, p < 0.01, higher sputum neutrophils (82.25[32.75]% vs. 55.50 [29.75]%, p < 0.01) and lower serum IgE (30 [76.50] KUL^{-1} vs. 157 [212.90] KUL^{-1}, p < 0.01). The epithelial 8-oxodG ^{high} group (n = 8) had significantly more exacerbations 3.9 (0.3) vs. 0.5 (0.3) p < 0.01 and a lower ACQ 6 score 1.4 (0.3) vs. 2.4 (0.3) p = 0.04.

In the asthmatic group, the intra-class correlation coefficient of sputum 8-oxodG between the 2 visits was 0.51 (p < 0.01).

Conclusions 8-oxodG expression in sputum and bronchial biopsies was not different between asthma and health, although we did identify an 8-oxodG^{high} group in asthma. Interestingly, expression in asthma was associated with neutrophilic inflammation and poor asthma control.

S133 β2-ADRENERGIC RECEPTOR GLY16ARG POLYMORPHISM IS NOT ASSOCIATED WITH IMPAIRED ASTHMA CONTROL IN CORTICOSTEROID TREATED ADULT ASTHMATICS

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Introduction The Arg-16 β_2-adrenergic receptor allele is associated with increased exacerbations in asthmatic children exposed to combination therapy with long-acting beta-agonists (LABA) and inhaled corticosteroids (ICS).[1] We evaluated whether the Gly16Arg polymorphism is associated with impaired asthma control in ICS treated adult asthmatics and whether this was influenced by concomitant LABA use.