Methods We obtained nasal AECs by brush sampling from children with severe atopic asthma (AA) and healthy controls (HC) (n=3–6). Cells were cultured in the presence/absence of the predicted drugs amitriptyline and prednisone and stimulated with lipopolysaccharide (LPS, 10 μg/mL, 0–24h), to mimic a bacterial infection. A20 and p65 mRNA and the release of pro-inflammatory cytokines from AEC cultures were determined.

Results AEC basal A20 was lower in AA compared to HC (p<0.05). LPS stimulation induced A20 in HC rapidly (peak at 1h LPS, p<0.05) and the elevated levels were maintained for up to 4 hours. In AA, LPS also caused an increase in A20 mRNA (lower than in HC) and found to be only elevated at 4h. NF-kB p65 significantly increased 1h after LPS stimulation in HC and 4h after LPS in AA cells (both p<0.05).

Amitriptyline (effective concentration 10 μM), increased A20 levels in both HC and AA epithelial cells. HC responded with a peak expression at 1h LPS (p<0.05), while in AA cells, we observed a steady increase in A20 for up to 24h LPS. Prednisone (10−3 μM) induced A20 with a peak expression at 4h in AA and HC, but the increase was significantly higher in HC epithelial cells.

The increase in A20 mRNA was paralleled by a significant decrease in p65 mRNA in amitriptyline and prednisone-treated cells and a decrease in IL-8 release.

Conclusion ScsMap predicted drugs that successfully induced the anti-inflammatory protein A20 in AECs, which resulted in a reduced inflammatory response to bacterial stimulation (LPS). Although the anti-inflammatory effect of prednisone is well established, we here add that this is mediated through the induction of A20. Furthermore, the application of amitriptyline as an anti-inflammatory medication may need further investigation. This proof of concept study using bioinformatics could be used to identify other drugs that could be repositioned as anti-inflammatory treatment in asthma.

OC44 OPTIMIZATION OF DIAGNOSTICS FOR CARBOHYDRATE MECHANISM DISORDER IN CHILDREN WITH CYSTIC FIBROSIS

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Aim To study the incidence and optimize diagnostics of carbohydrate mechanism disorder in children with cystic fibrosis (CF).

Materials and methods We have examined 43 patients with cystic fibrosis. All the patients were subject to the following tests: blood chemistry, HbA1c, insulin, C-peptide EIA assay, antibodies to ICA, IAA, GAD in order to rule out other forms of diabetes mellitus, oral glucose tolerance test (GTT). Carbohydrate mechanism disorders were diagnosed according to the WHO criteria (ISPAD 2018). In order to assess tissue sensitivity to insulin, Homa and Caro indices were calculated during the study. Additionally, 31 patients (including 15 children aged 3–11, others were adolescents) underwent Continuous Glucose Monitoring System (CGMS) test with the help of MiniMed Paradigm 722. All the children were given a molecular genetic test in order to detect various GFTR mutations.

Results The oral glucose tolerance test revealed carbohydrate metabolism disorders in 28% of the case, CF-associated diabetes mellitus was diagnosed in 19% of the case. Impaired glucose tolerance was diagnosed in 9% patients. Carbohydrate metabolism disorders among adolescents were distributed as