Quantification of major urinary metabolite of PGE2 in cystic fibrosis (CF) patients: Correlation with parameters of disease severity

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Studies have demonstrated overproduction of prostaglandin E2 (PGE2) in CF. In vitro study show that alterations in CFTR are involved in overproduction of PGE2. Findings that suggest that measurement of PGE2 production may help to assess the severity of the altered regulation of CFTR and intensity of inflammatory process in the airways of CF patients. Tetranor PGEM (PGE-M) is a metabolite present in urine that accurately reflects the biosynthesis of the PGE2. In this study we assessed the relationship between levels of PGE-M with CF severity.

Methods: 36 patients with stable CF and 24 healthy controls were recruited. All CF patients had undergone evaluation of pancreatic function, lung function by spirometry and genotype severity. PGE-M levels were measured by a liquid chromatographic/mass spectrometric assay. Results: PGE-M concentrations were markedly and significantly elevated (p < 0.0001) in the urine of CF patients (34.5 ± 45 ng/mgCr) compared with healthy controls (7.4 ± 4.25 ng/mgCr). There was no correlation between PGE-M urinary levels and spirometric values. In patients with pancreatic insufficiency there was a higher PGE-M urinary level (38.37 ± 7 ng/mgCr) than in patients with conserved pancreatic function (10.4 ± 6.46 ng/mgCr) (p = 0.05). There was an association of the severity of genotypes with levels of PGE-M: mild: 8.6 ± 4.1 ng/mgCr; moderate: 19.7 ± 11 ng/mgCr; severe: 48 ± 53.3 ng/mgCr (p < 0.0027).

Conclusions: Measurement of urinary PGE-M may be a useful tool to investigate severity of CF and to assess the efficacy of any therapy aimed to improve the function of a defective CFTR.

Prevalence of autoimmune antibodies in patients with cystic fibrosis after lung transplantation

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Background: Autoimmune antibodies (Ab) can be found in up to 80% of CF patients prior to lung transplantation and anti-neutrophil cytoplasmic antibodies (ANCA) may be associated with severity of lung disease and disease prognosis [1]. In this pilot study, we investigated the prevalence of autoimmune antibodies in CF patients after lung transplantation (LuTx).

Methods: Consecutive patients attending our outpatient clinic were screened for a wide range of autoantibodies in serum (ANA, AMA, SMA, EMA, TTG Ab, p-ANCA, c-ANCA, ASCA, SLA, LC-1 Ab), as well as for IgG, IgA and IgM. Autoimmune diseases were excluded.

Results: 36 patients (median age 30 y, IQR 25–38 y; 42% male) were included in the study. Median time since LuTx was 4.5 y (IQR: 2.3–8.3 y). IgG levels were elevated in 8% (3/36) of patients. Overall prevalence of autoantibodies was 83%. However, only 12% (4/34) of patients had elevated ANAs, only one patient tested positive for SMA. Of note, 83% (24/29) of patients had elevated anti-saccaromyces cerevisiae antibodies (ASCA). Of these, 4 of 24 ASCA IgG only, in 8 of 24 ASCA IgA only, and in 12 of 24 both were positive. Yet, in none of the patients neither AMA, EMA, TTG Ab, SLA nor ANCAs were detected.

Conclusion: In contrast to published data in CF patients pre LuTx, ANCAs were not found in patients post LuTx. ASCAs were the dominant fraction in our panel of autoantibodies. Association with clinical outcomes are part of this ongoing trial.

Reference(s)