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| **The effects of CFTR modulators on sputum pH** |
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| **Introduction/Aim:** The advent of cystic fibrosis transmembrane conductance regulator (CFTR) modulator therapies has substantially improved disease outcomes and prognosis of people living with cystic fibrosis (CF).Airway pH is reduced in CF in human and animal studies of exhaled breath condensates. This preliminary study aimed to investigate how CFTR modulator therapies changed the pH and cellularity of sputum in adults, and examined whether changes in pH or airway inflammation were related to clinical outcomes. **Methods:** Sputum was collected from participants prior to starting modulator therapy and repeated at 12 months. Sputum pH was measured and cell counts were recorded at each time point. We present an exploratory initial analysis to evaluate the relationship between sputum pH and inflammatory cell counts in response to modulator therapy.**Results:** The mean sputum pH at baseline was 6.9± 0.12. At 12 months, the sputum pH significantly increased to a neutral mean pH of 7.4 ± 0.13 (p= 0.05). Interestingly, we found no change in inflammatory cell counts between baseline and 12 month follow up. These findings will be validated in a larger cohort of patients to confirm the relationship between sputum and clinical response to modulator therapy. **Conclusion:** This analysis provides a unique insight into the effect new CFTR modulator therapies have on sputum composition providing insight into the substantial reduction in sputum availability from adults with CF as a consequence of this new therapy. **Grant Support: TPCH Foundation “TEAM grant”.**Queensland Health Clinical Research Fellowship (Dr David Reid). |