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**Title:** The species-specific inflammatory response of colonising bacteria in stable COPD

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**Body:** Potentially pathogenic micro-organisms (PPMs) are frequently isolated from stable COPD patients. We hypothesised that the degree of airway & systemic inflammation is dependent on species of PPM. Sputa & sera collected from stable patients in the London COPD Cohort were analysed by qPCR to detect H. influenzae (HI), M. catarrhalis (MC) and S. pneumoniae (SP), ELISAs for airway IL-8, IL-1 $\beta$  & MPO, & sera CRP was measured. 183 paired sputa & sera from 99 stable patients were included. Clinical characteristics are shown in Table 1.

Baseline Characteristics n=99

Mean (SD) Age (years)	72.1 (8.9)
Mean (SD) FEV1 (l)	1.32 (0.54)
Mean (SD) FEV1 (% pred)	51.5 (21.6)

PPMs were detected in 64/183 of sputa. HI & SP were equally prevalent & there was no significant difference between their loads ( $p=0.49$ ). MC load was significantly higher than both HI ( $p<0.001$ ) & SP ( $p=0.001$ ). Patients with lower airway bacterial colonisation (LABC) by any PPM had significantly higher airway cytokines than non-LABC patients (all  $p<0.001$ ). HI-colonised but not SP- or MC-colonised patients had significantly higher airway cytokines than non-LABC patients (all  $p<0.05$ , Figure 1). There was no significant difference between CRP in non-LABC & LABC patients, or between non-LABC patients & different PPMs.

LABC patients have higher airway, but not systemic inflammation, & this is associated with HI. Targeting HI in stable COPD may potentially help to decrease airway inflammation.