

Clinical and inflammatory characteristics of patients with COPD in primary care: an observational study

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Introduction: The majority of COPD patients are seen in primary care, where approximately 1.4 million acute exacerbations of COPD are treated, but little is known about the inflammatory phenotype or the response to treatment at the time of an exacerbation. The peripheral blood eosinophil (PBE) count can be measured from a single drop of blood & can inform clinicians about the inflammatory phenotype. We conducted a prospective observational study in patients with COPD in the Thames Valley region to understand inflammatory characteristics in COPD (Stratified TreAtment to Reduce Risk in COPD: The COPD STARR study).

Methods: Subjects with COPD, defined according to clinical history & spirometry, were entered into an observational study in 8 GP practices in Oxfordshire. Data sampling at study entry included baseline demographics & near-patient testing for a 5-point differential cell count, using the HemoCue® (LLD 50 cells/ μ L).

Results: 158 COPD subjects (103 males) were recruited. The mean (range) age was 71 years (46 to 94) with an average FEV₁% predicted of 65%. The average (range) exacerbation history in the previous year was 1.1 (0 to 6). The geometric mean (95%CI, $\times 10^9$ cells/L) of total leukocytes, neutrophils & eosinophils was 7.1 (6.7 to 7.6), 4.3 (4.0 to 4.6) & 0.17 (0.15 to 0.19) respectively. A relative eosinophil count of >2% occurred in 60%. In 20 exacerbations, 35% had a treatment failure within 30 days & 53% reported feeling worse after treatment.

Conclusion: Measurement of cell counts in patients with COPD is possible in primary care & may have utility in understanding treatment responses.