Abstract P199 Table 1

Mean VAS(0 to 100mm)	Standard group (n=10)	ICNB group (n=10)	P value
1 hour post LAT	64	23	0.002
2 hour post LAT	64	23	0.002
Day 1	55	17	0.001
Day 2	34	NA	NA
Length of stay (Mean/Median, days)	2.4/2	1/1	0.009
Total analgesia use (mean)			
Oral morphine,mg	38.5	23	0.347
Codeine,mg	34.4	38.6	0.912
Paracetamol,g	3.4	1.5	0.006

In this small cohort, ICNB potentially has a role in reducing pain, LOS and analgesia use and allows LAT to be more tolerable, and may widen the scope of procedures possible during LAT.

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URINARY LEUKOTRIENE E4 AS A BIOMARKER IN NSAID EXACERBATED RESPIRATORY DISEASE (N-ERD): A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction NSAID exacerbated respiratory disease (N-ERD) - formerly aspirin-induced asthma (AIA), is an asthma phenotype characterised by increased leukotriene production. Urinary Leukotriene E4 (uLTE₄) indicates cysteinyl leukotriene production and activity.

Objectives To evaluate whether baseline uLTE₄ in N-ERD are different from post-aspirin challenge uLTE₄ in N-ERD and whether baseline uLTE₄ in N-ERD are different from aspirin-tolerant-asthma (ATA) patients and healthy controls (HC).

Methods A systematic literature search (Medline, EMBASE, EMCARE, CINAHL, PsychINFO) was performed from database inception to January 2021, to identify 1) studies reporting baseline uLTE₄ in both AIA/N-ERD and ATA asthmatics, and 2) uLTE₄pre- and post-aspirin challenge tests. Meta-analysis was performed (i.e. pooled standardised mean difference (SMD) with 95% confidence intervals (95% CI)) and risk of bias assessed (implementing Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy).

Results Of 522 study records reviewed, qualitative synthesis and meta-analysis were performed on $n=36$ and $n=33$ studies respectively (Meta-analysis; $n=1273$ AIA, 1305 ATA, and

582 HV across 8 countries). Criteria for aspirin intolerance were (i) positive aspirin challenge alone ($n=26$), (ii) convincing clinical history ($n=2$), and (iii) either challenge or history ($n=8$). Methodologies used for uLTE₄ analysis were (i) Amer-sham-enzyme immunoassay (A-EIA) ($n=8$), (ii) Cayman-enzyme immunoassay (C-EIA) ($n=18$), (iii) mass spectrometry (MS) ($n=5$), and (iv) radioimmunoassay (RIA) ($n=6$). uLTE₄ was higher in AIA vs ATA (SMD: 0.80; 95% CI: 0.71–0.89) and distinguished ATA from HC (SMD: 0.52; 95% CI: 0.23–0.81). For studies reporting uLTE₄ at baseline and post-challenge, uLTE₄ increased following aspirin challenge in AIA ($n=12$, SMD: 0.56; 95% CI: 0.26–0.85) but not ATA ($n=8$, SMD: 0.12; CI: -0.08–0.33). Risk of bias was acceptable across all studies, however 30.6% of quality assessment items were unfulfilled.

Conclusions This comprehensive systematic review and meta-analysis showed that uLTE₄ is significantly higher in N-ERD than ATA or HC. Likewise, people with N-ERD have greater increases in uLTE₄ following aspirin challenge. Because of heterogeneity, and lack of original data point reporting, diagnostic accuracy evaluation for uLTE₄ was not possible. In patients not fit to undergo confirmatory challenge tests for N-ERD, uLTE₄ can serve as a useful adjunct to diagnostic process.

Please refer to page A193 for declarations of interest related to this abstract.

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TO WHAT EXTENT DOES THE PROTOTYPE ORACLE SCALE PREDICT TREATMENT BENEFITS? PREDICTED VERSUS OBSERVED IMPACT OF ANTI-INFLAMMATORY TREATMENTS

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Background We have derived a prototype asthma attack risk scale (ORACLE)¹ centred on the peripheral blood eosinophil count and exhaled nitric oxide (FeNO). We speculate that the excess risk identified by raised biomarkers would be equivalent to the benefits of specific anti-inflammatory treatment.

Objective To assess whether the treatment effect conferred by raised blood eosinophils and FeNO is predicted by ORACLE.

Methods Observed biomarker-stratified annualised severe asthma attack rates of patients randomised to control and anti-inflammatory treatment arms were extracted from the Novel START (as needed salbutamol vs low dose regular or as needed ICS), CAPTAIN (fluticasone furoate (FF) 100 vs 200µg/d-containing arms), QUEST (placebo vs Dupilumab 200mg/2w), and DREAM (placebo vs any mepolizumab) studies. Observed rate ratios were calculated between control and active arm attack rates in patients with any raised type-2 biomarker at baseline (blood eosinophils $\geq 0.15 \times 10^9/L$ or FeNO ≥ 25 ppb) and those with none (blood eosinophils $< 0.15 \times 10^9/L$ and FeNO < 25 ppb). The predicted biomarker-stratified attack rates were calculated based on our hypothesis that type-2 high asthma has an anti-inflammatory treatment effect equal to moving from any biomarker high stratum's predicted risk to the biomarker low stratum's predicted risk.

Results The Table shows the observed vs ORACLE-predicted biomarker-stratified annual asthma attack rates and anti-