TLD in COPD:
AIRFLOW-2 Sham Controlled Trial

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Disclosure

I have received lecture and/or consultancy fees from (alphabetical order): Astra Zenca, Boehringer Ingelheim, Chiesi, GSK, Novartis, Nuvaira, Olympus, PneumRx, PulmonX, Uptake Medical

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AIRFLOW-2 Study Overview

AIRFLOW 2 CLINICAL TRIAL	NCT#02058459
Design	Multicenter, randomized sham-controlled study
Objective	Assess safety and feasibility outcomes between TLD vs. sham-control
Primary Endpoint	Rate of respiratory related adverse events between 3 and 6.5 months
Patient #	n=82 (1:1 randomization)
Follow-up	Weeks: 1 Months: 1, 3, 6*, 9 Years: 1*, 1.5, 2, 2.5, 3
Status	In active follow-up

*on and off drug assessment time-point

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AIRFLOW-2 Key Inclusion/Exclusion

Inclusion:

- ✓ FEV_1 30% to 60%
- ✓ FEV_1/FVC <70%
- ✓ mMRC grade ≥2 or CAT score ≥10
- ✓ Non smoking ≥2 months

Exclusion:

- X <6 weeks since COPD exacerbation or active respiratory infection
- X PaO2 ≤ 7.3 kPa (55 mm Hg) or PaCO2 > 8.0 kPa (60 mm Hg)
- X Pulmonary nodule requiring surgery, radiation and or/chemotherapy
- X Previous abdominal surgical procedures
- X Elevated baseline gastric questionnaire score

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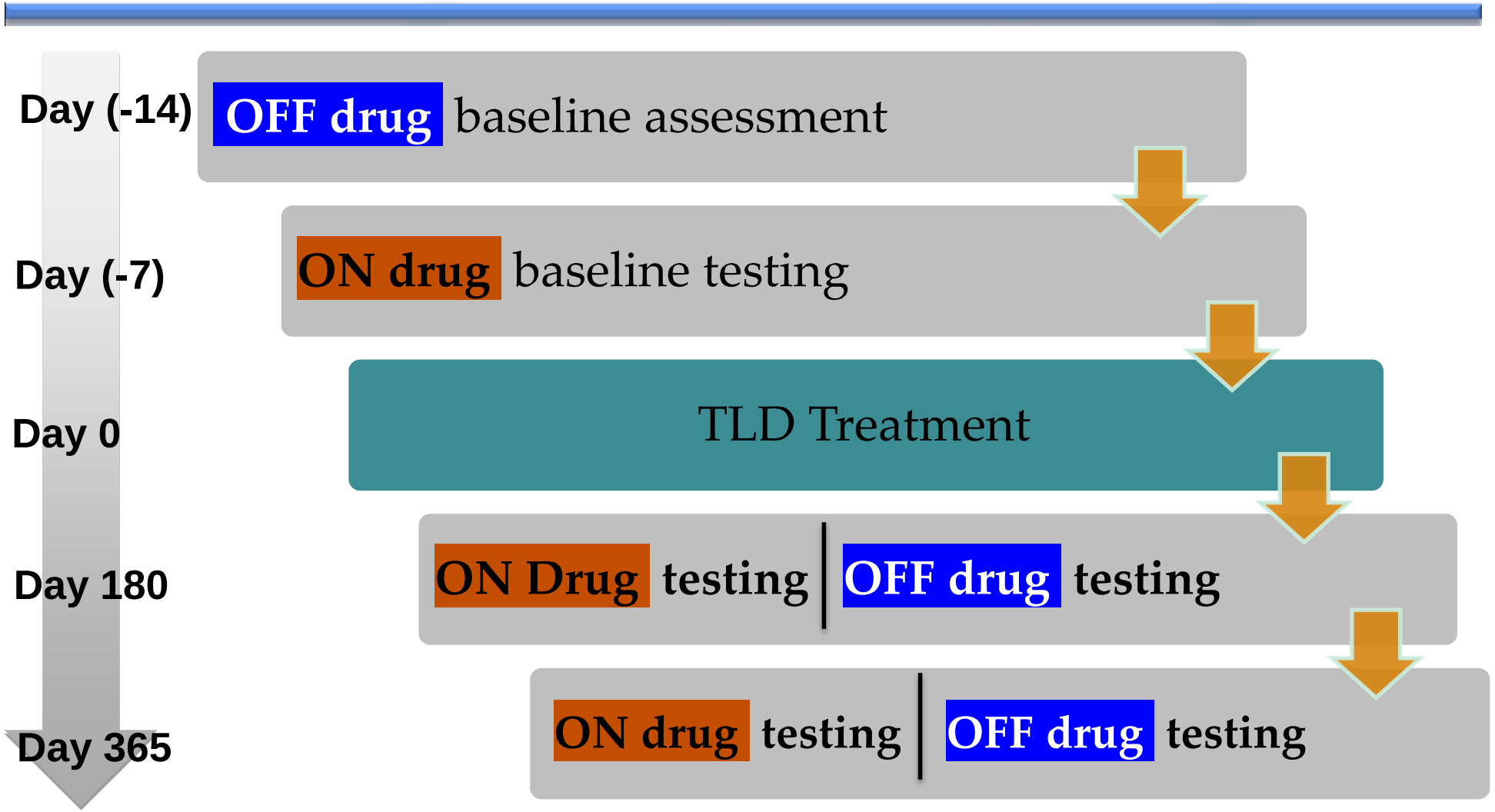
Post Enrollment Patient Flow



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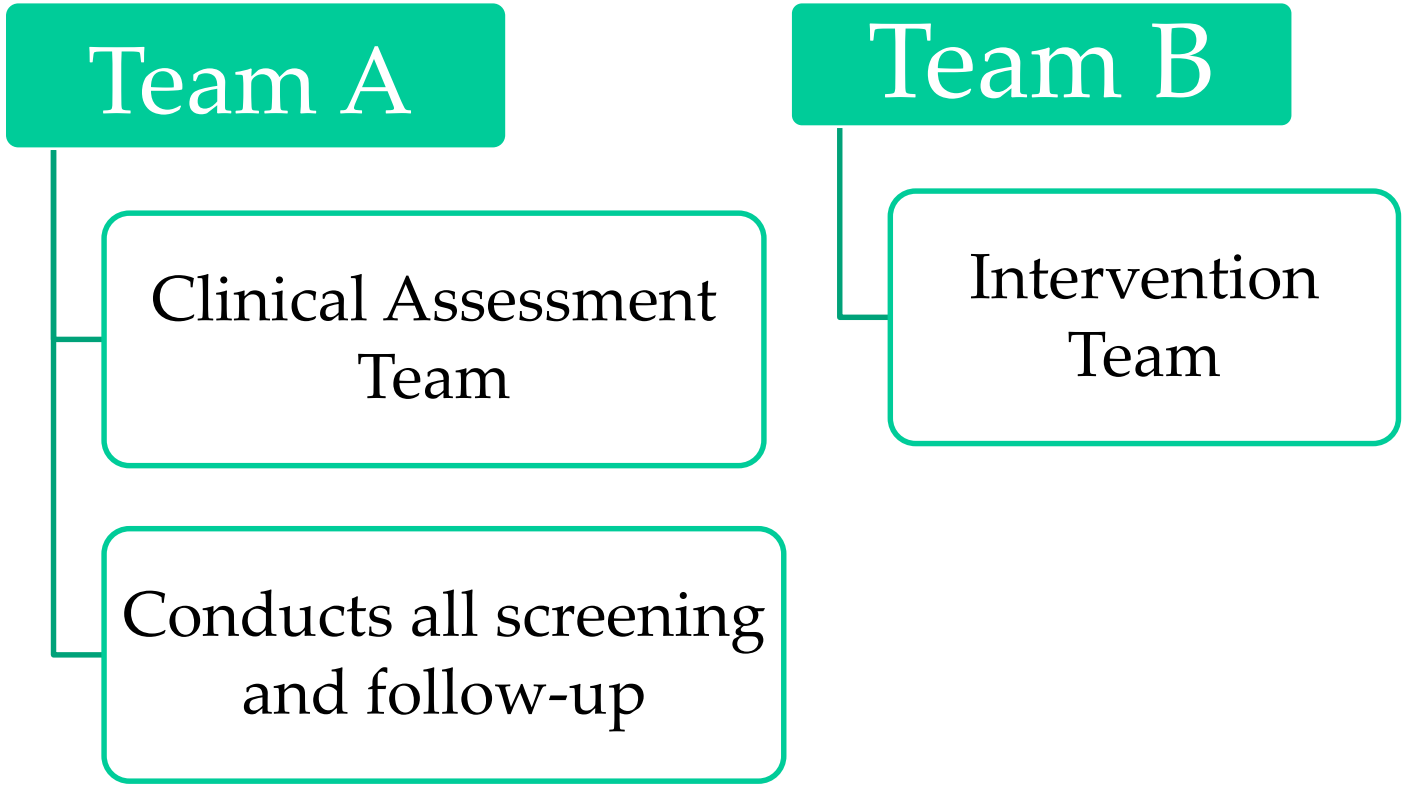
Study Blinding Plan



All procedures performed under general anesthesia.
Console “recordings” used during sham treatments.

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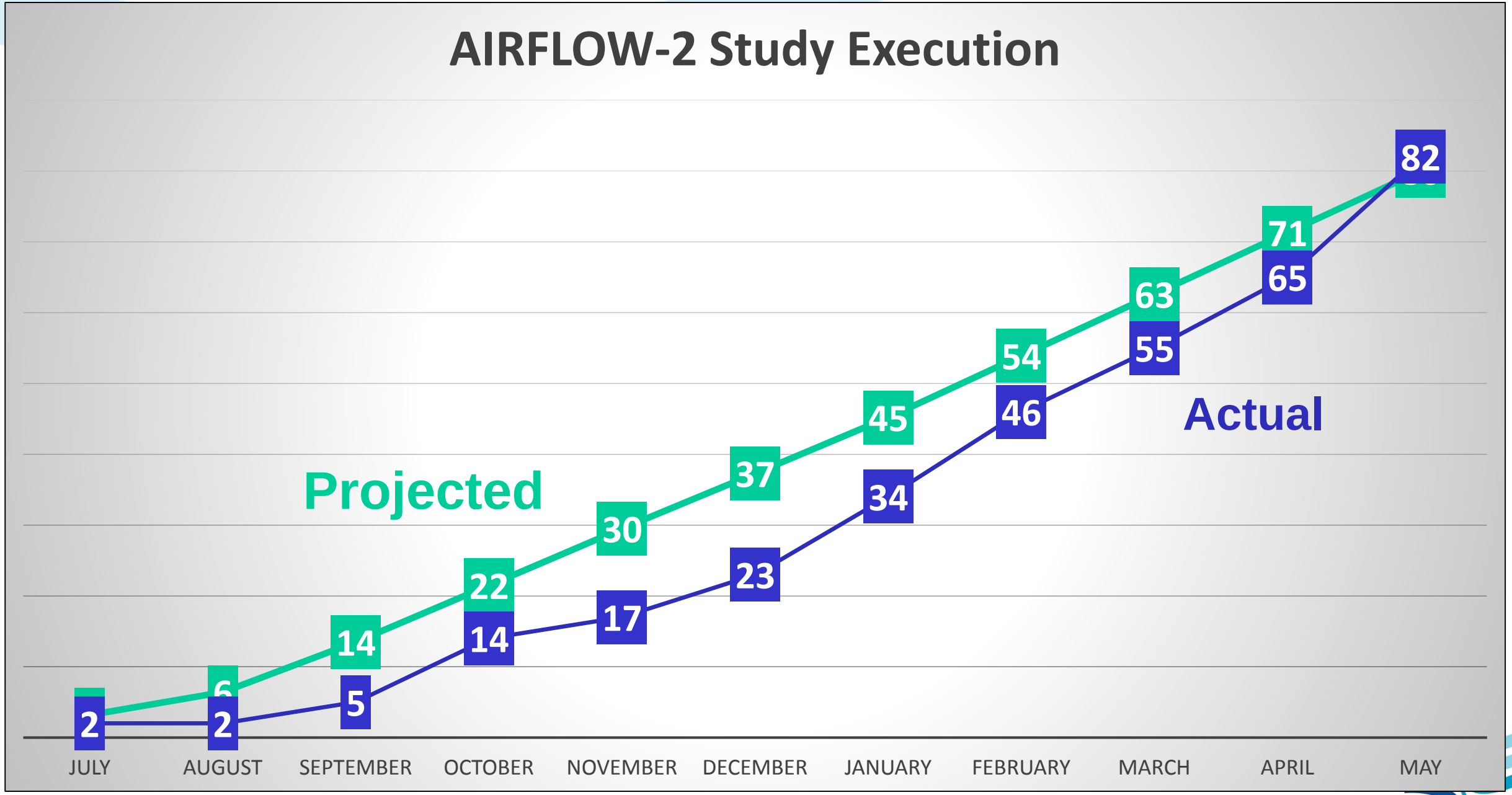
AIRFLOW-2 Study Execution



Unpublished Data

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AIRFLOW-2 Site Participation

Site	Country	Site PI	Randomized
Groningen	NL	Slebos	12
London	UK	Shah	12
Vienna	AT	Valipour	12
Heidelberg	DE	Herth	9
Grenoble	FR	Pison	7
Kempten	DE	Schumann	5
Strasbourg	FR	Kessler	4
Amsterdam	NL	Bonta	4
Gauting	DE	Gesierich	4
Berlin	DE	Hubner	4
Essen	DE	Darwich	3
Linz	AT	Lamprecht	2
Lille	FR	Perez	2
Bonn	DE	Skowasch	1
Reims	FR	Deslee	1
Paris	FR	Marceau	0

194  Enrolled

82  Randomized

16 

Sites

5  Countries

Unpublished Data

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AIRFLOW-2 Baseline Characteristics

	Treatment N=41	Sham N=41
Age (years)	63.7 (6.73)	63.7 (6.96)
Male	22 (53.7%)	19 (46.3%)
BMI	25.4 (3.80)	25.6 (4.22)
History of Smoking (years)	37.8 (7.40)	38.5 (10.35)
Pack-Years	43.5 (22.59)	50.3 (31.61)
Wash-out FEV_1%	34.6 (8.19)	32.5 (6.57)
Wash-out FEV_1 (L)	0.97 (0.35)	0.89 (0.24)
Wash-out FVC (L)	2.76 (0.83)	2.50 (0.88)
% Emphysema*	27.9 (12.89)	25.3 (10.70)

Populations very similar

-Data are mean (SD) unless stated otherwise.
-FEV_1=forced expiratory volume in 1s
-FVC=forced vital capacity

**values calculated by CT Core Lab (VIDA Diagnostics)*

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AIRFLOW-2 Procedural Characteristics

	Treatment N=41	Sham N=41
Total procedure time (minutes)	75.6 (21.60)	42.0 (8.56)
Fluoroscopy time (minutes)	3.4 (2.41)	NA
Length of stay (days)	1.0 (1.02)	1.0 (1.09)
Catheters used per patient	1.6 (0.86)	1.0 (0.16)*

**catheter used for simulation of procedure*

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Nuvaira™ Lung Denervation System

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TLD Procedure Video

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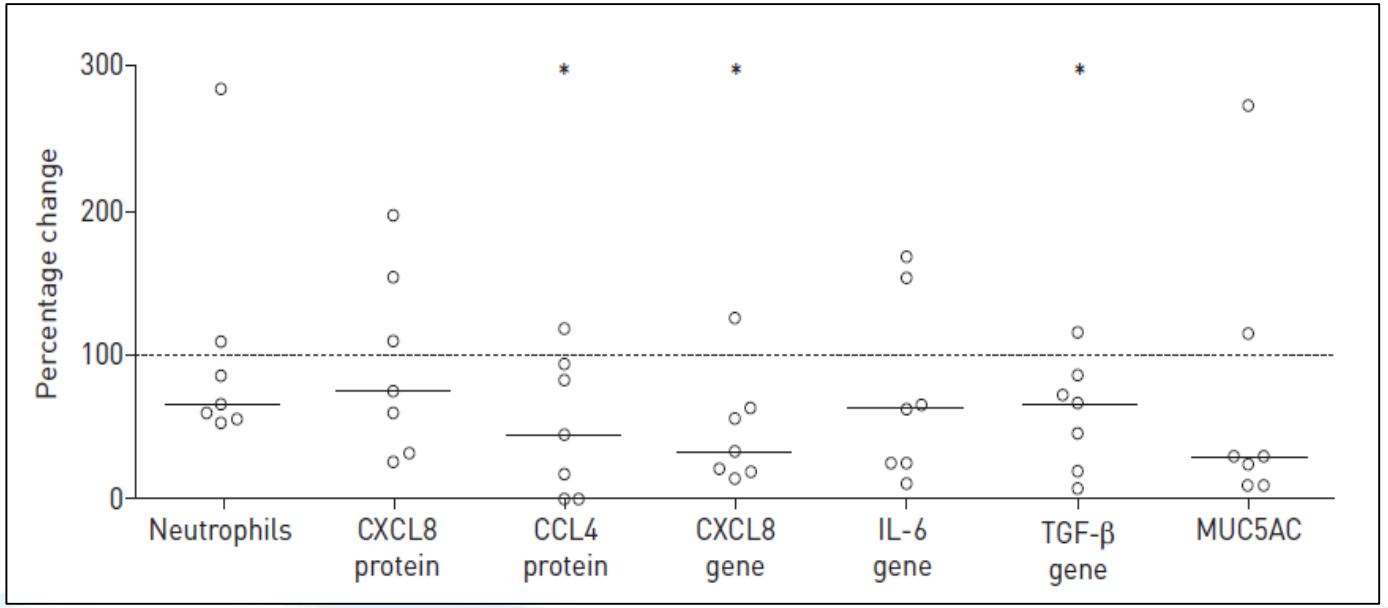
AIRFLOW-2 Inflammatory Sub-study: Understanding MOA of TLD

- Goal:
  - To study the anti-inflammatory affects of anticholinergic intervention via RNA analysis, differential cell counts and cytokine analysis at baseline and 3 months post-TLD treatment (ex. Neutrophils, IL-6, MUC5AC)
  - Expand on results from earlier IPS-I Study



Kistemaker et al., *Eur Respir J* (2015)

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TLD COPD Program: Next Steps

- AIRFLOW-2
  - Continue multivariate analysis work to identify best patients for TLD therapy
  - Assess inflammatory marker data
  - Begin sham crossover early next year (upon DMC approval)
  - 1-year data available at ERS 2018, Paris

Goal of optimizing AIRFLOW-3 pivotal trial plan

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Thank you.

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