What’s new in asthma in 2025

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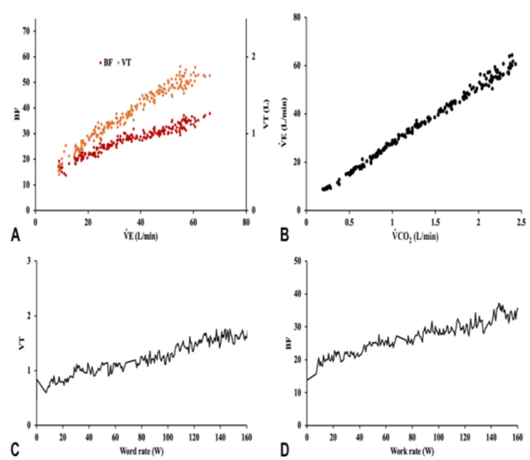
Plan

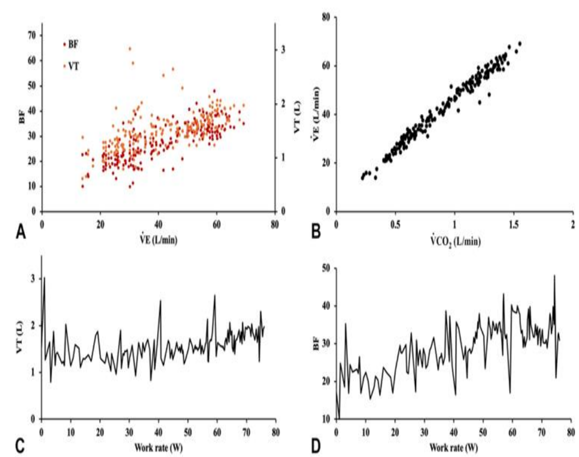
- Dysfunctional breathing and role of multimorbidity in asthma – 2 articles
- Biologics for eosinophilic exacerbation in acute care settings – 1 article
- Real life biologics use in Switzerland – 1 article

Original Article

Diagnosis of Dysfunctional Breathing in Severe Asthma

Thibaud Soumagne, MD, PhD[a], Gilles Garcia, MD, PhD[b], Justine Frija, MD, PhD[c], Cécile Chenivesse, MD, PhD[d,e], Thierry Perez, MD[d,e], Laurent Plantier, MD, PhD[f], Marc Humbert, MD, PhD[e,g,h], Pierantonio Laveneziana, MD, PhD[i], Antoine Beurnier, MD[e,j], Camille Taillé, MD, PhD[e,k], and Bruno Degano, MD, PhD[e,l,m] *Paris, Antony, Lille, Toulouse, Tours, Le Kremlin-Bicêtre, and Grenoble, France*





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Original Article

Diagnosis of Dysfunctional Breathing in Severe Asthma

Thibaud Soumagne, MD, PhD[a], Gilles Garcia, MD, PhD[b], Justine Frija, MD, PhD[c], Cécile Chenivesse, MD, PhD[d,e], Thierry Perez, MD[d,e], Laurent Plantier, MD, PhD[f], Marc Humbert, MD, PhD[e,g,h], Pierantonio Laveneziana, MD, PhD[i], Antoine Beurnier, MD[e,j], Camille Taillé, MD, PhD[e,k], and Bruno Degano, MD, PhD[e,l,m] *Paris, Antony, Lille, Toulouse, Tours, Le Kremlin-Bicêtre, and Grenoble, France*

BACKGROUND:

Dysfunctional breathing (DB) is common in severe asthma and is associated with poor asthma control. Diagnosing DB remains challenging owing to the lack of a gold standard.

OBJECTIVE:

To investigate the characteristics of patients with severe asthma with DB (n=138) using 2 diagnostic modalities: the Nijmegen Questionnaire (NQ) + the hyperventilation provocation test (HVPT) VS cardiopulmonary exercise testing (CPET).

METHODS:

- NQ-HVPT DB was confirmed by a panel of 4 chest physicians.
- CPET-based DB was performed independently by 2 blinded physiologists, with erratic breathing patterns evaluated by visual inspection and objective criteria.

Normal and dysfunctional breathing definition
Reminder

Normal breathing

- Unconscious control
- Low dispersion of tidal volume and breathing frequency,
- low number of sighs
- Absence of breathing vigilance

Dysfunctional breathing

- Uncomfortable rest and/or exercise dyspnea, sighs, increased breathing vigilance
- Abnormal breathing pattern at cardio pulmonary exercise test (CPET)
- High score at Nijmegen hyperventilation questionnaire (unvalidated)
- Exclusion of cardio-pulmonary or metabolic causes fully explaining these symptoms
- Association with asthma, COPD, post-COVID condition

Genecand, L., Jaksic, C., Bridevaux, P.-O. (2025). Comparing methods to measure the dispersion of breathing parameters during exercise testing: A simulation study based on real-life parameters from patients with dysfunctional breathing. *Physiological Reports*,

Boulding, R., Stacey, R., Niven, R., & Fowler, S. J. (2016). Dysfunctional breathing: A review of the literature and proposal for classification. *European Respiratory Review*, **25**(141), 287–294.

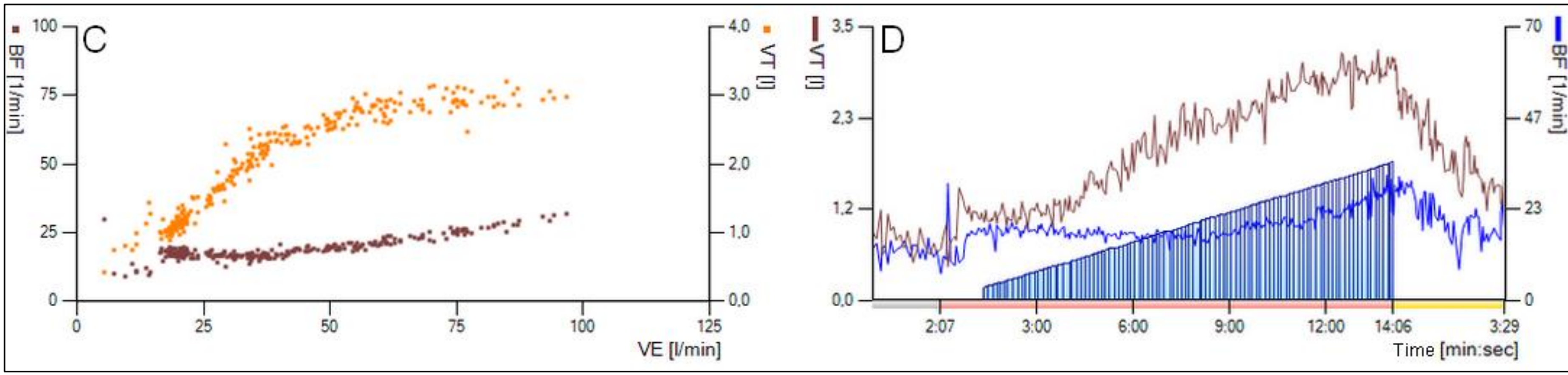
Normal and dysfunctional breathing definition

BMJ Open Respiratory Research

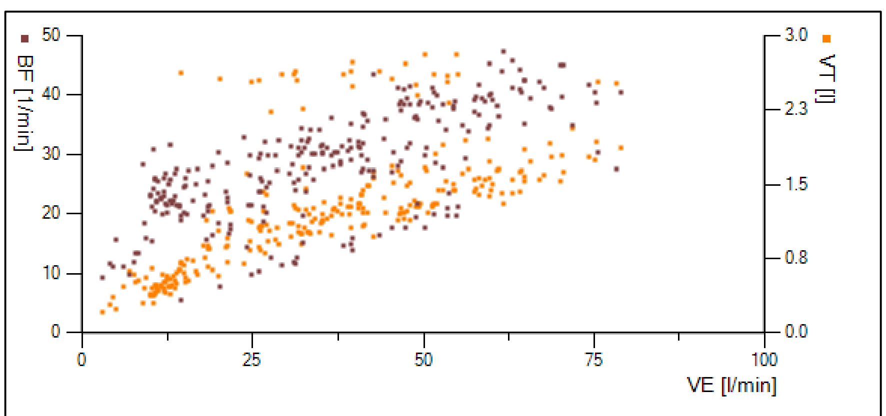
Dysfunctional breathing symptoms, functional impact and quality of life in patients with long COVID-19: a prospective case series

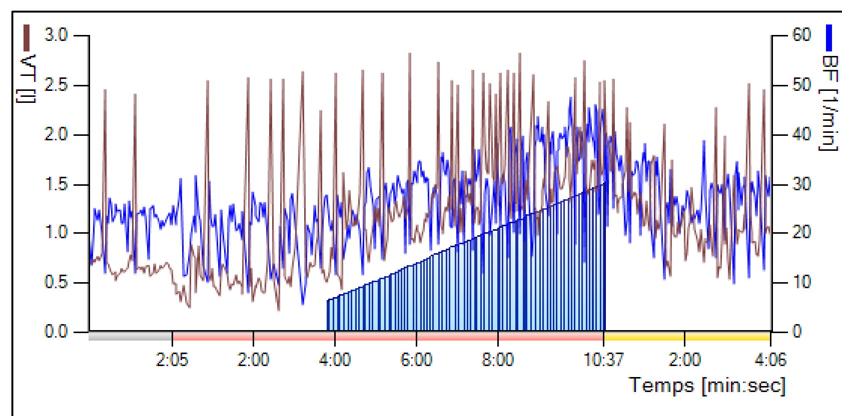
Léon Genecand[1,2,3], Marco Altarelli,[1,4] Alzbeta Binkova,[1,4] Selina Loew,[1,4] Stéphanie Vaudan,[1,5] Grégoire Gex,[1,4] Pierre-Olivier Bridevaux[1,3,4], Isabelle Frésard[1,4]

Healthy subject



Subject with erratic type of dysfunctional breathing and numerous sighs





Erratic-type dysfunctional breathing

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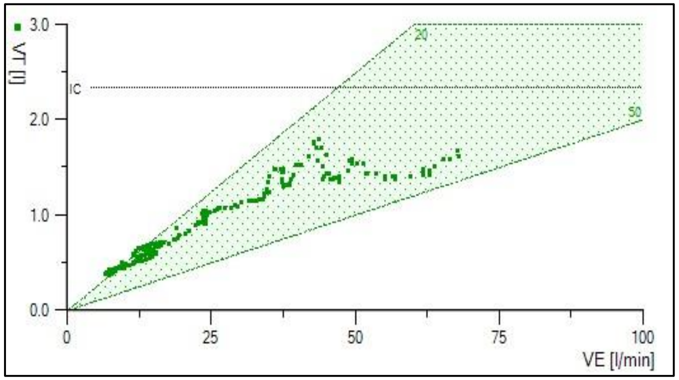

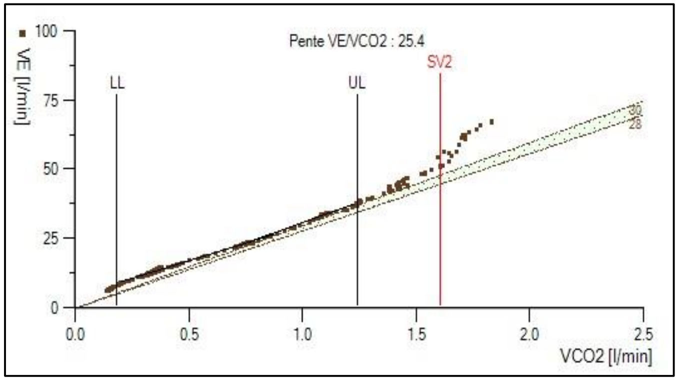

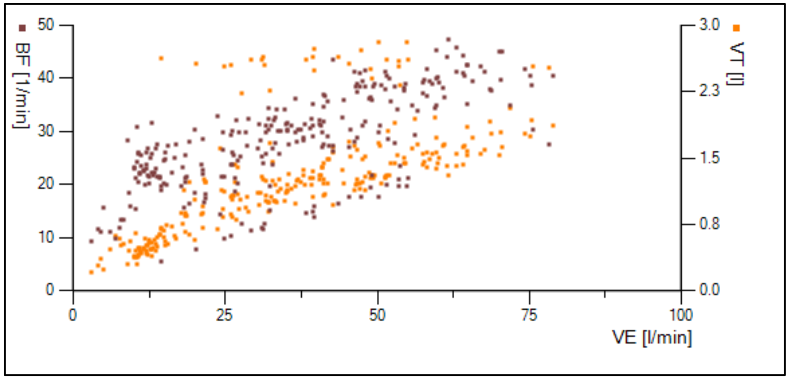

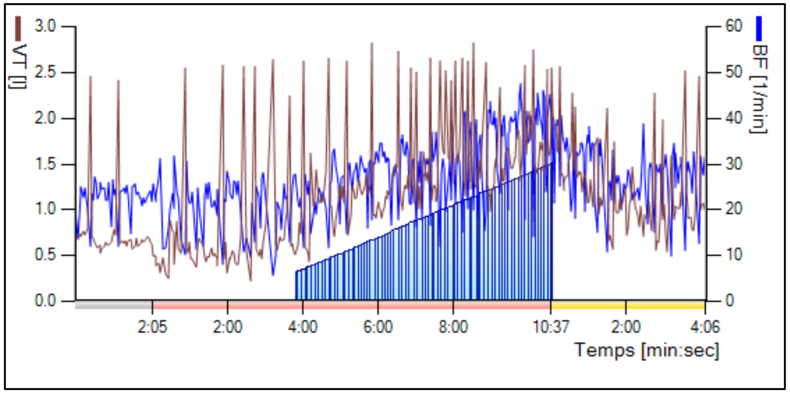

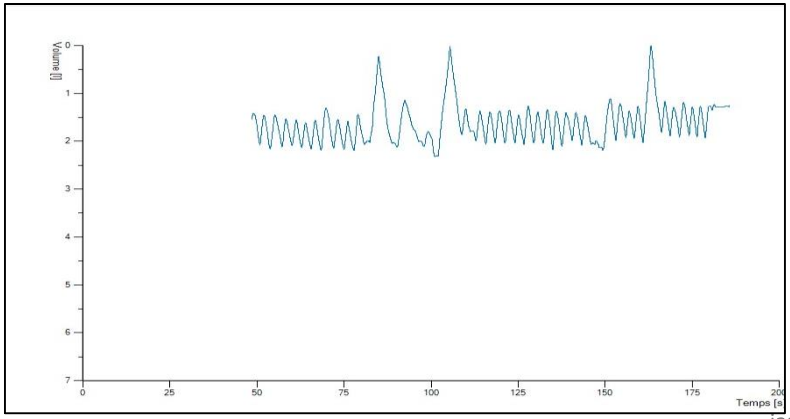

Hyperventilation-type dysfunctional breathing

BMJ Open Respiratory Research

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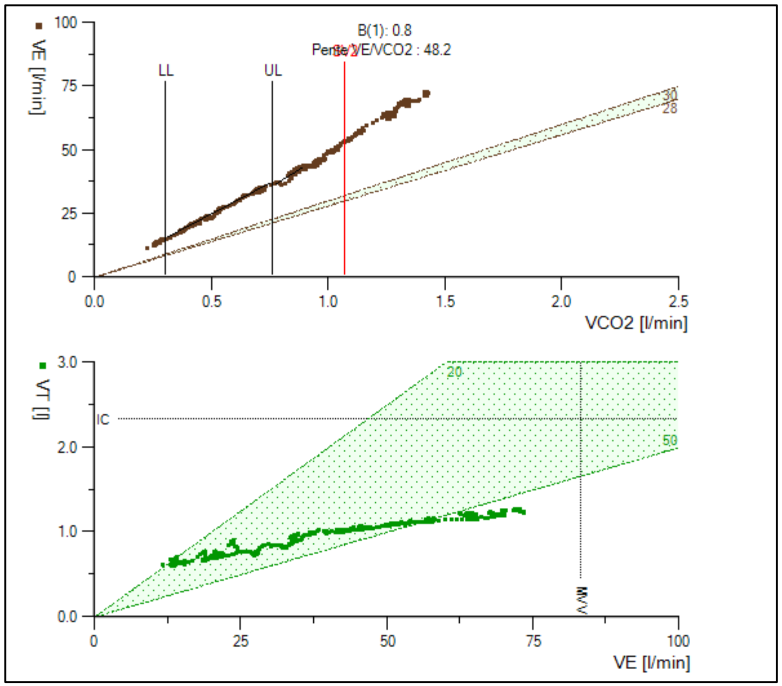
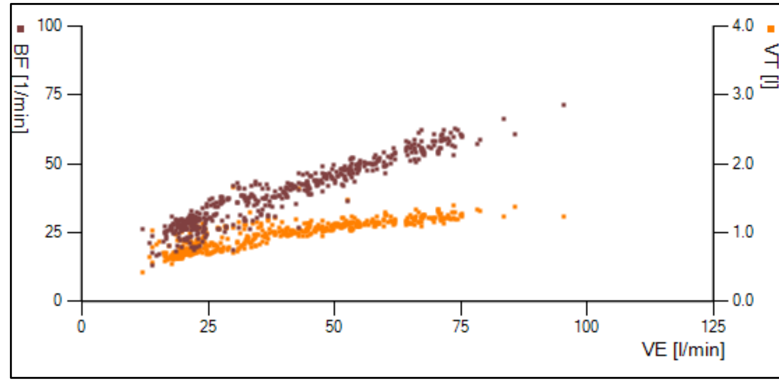
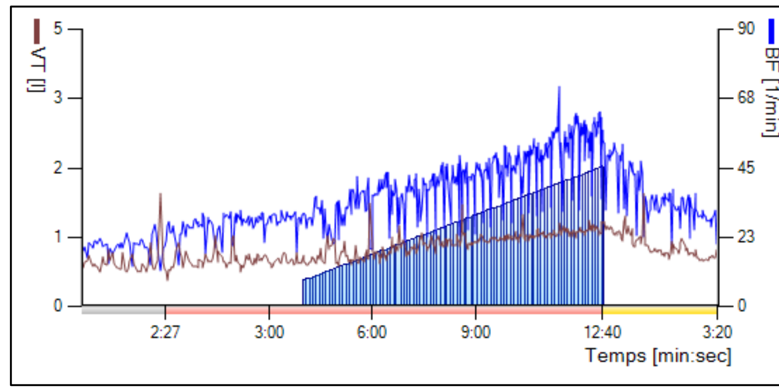
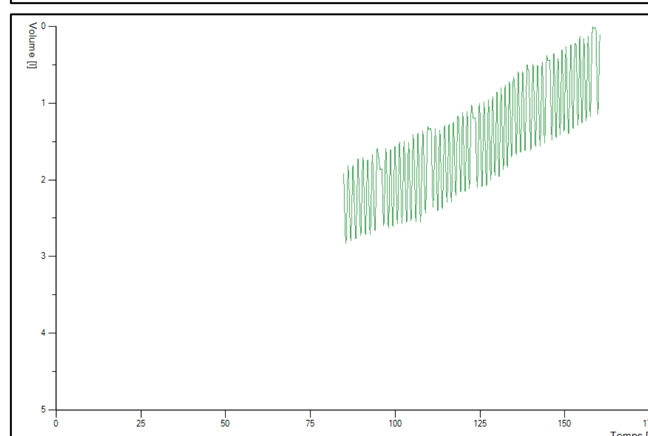
Léon Genecand[1,2,3] Marco Altarelli,[1,4] Alzbeta Binkova,[1,4] Selina Loew,[1,4] Stéphanie Vaudan,[1,5] Grégoire Gex,[1,4] Pierre-Olivier Bridevaux[1,3,4] Isabelle Frésard[1,4]

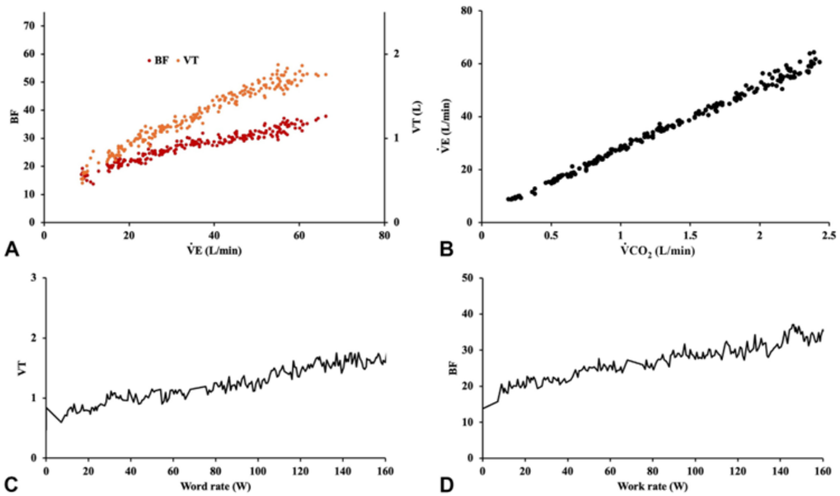


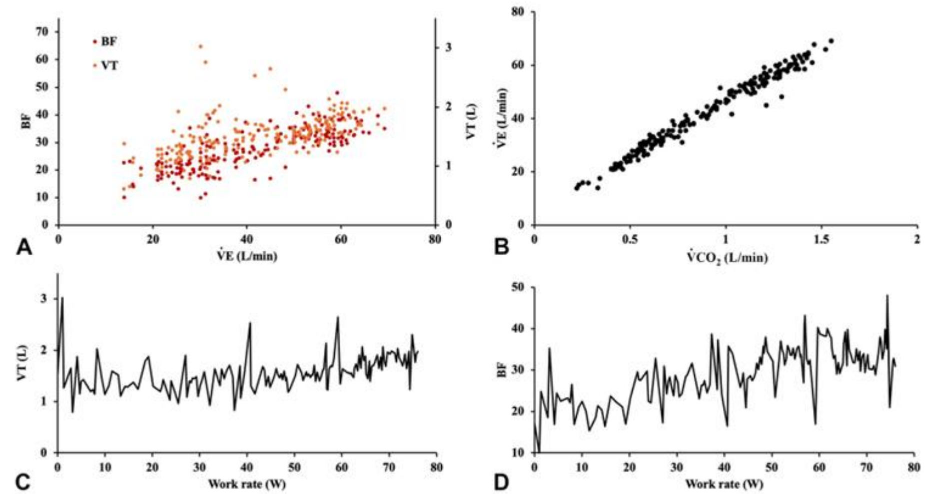






Erratic breathing (CPET) as a characteristic of dysfunctional breathing





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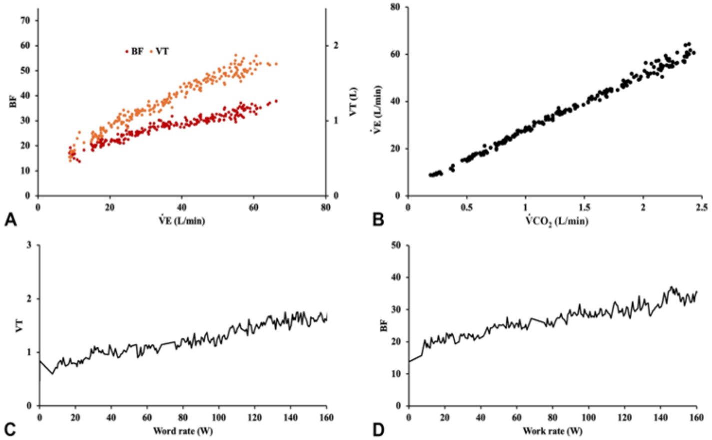
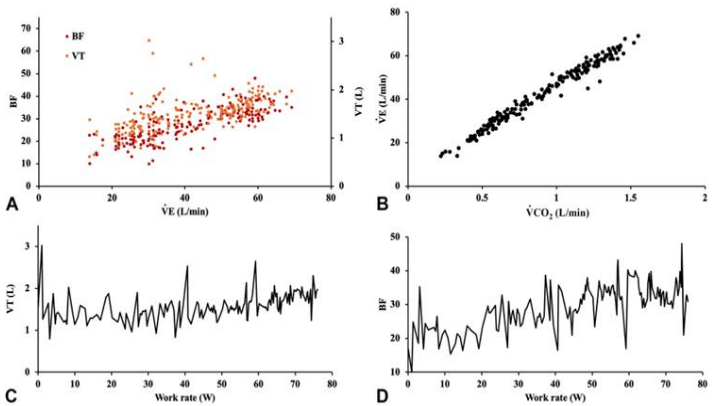
Diagnosis of Dysfunctional Breathing in Severe Asthma





	DB (according to NQ and HVPT) (n = 61)	No DB (n = 77)	*P* value†
Demographic			
Age, y	46.6 ± 12.7	44.4 ± 13.2	.32
Female sex	49 (80)	44 (57)	**.007**
Asthma characteristics			
Asthma duration, y	22.2 ± 15.6	22.1 ± 15.4	.96
Blood eosinophils, /mm^3	247 ± 224	342 ± 431	.11
Exacerbations in previous 12 mo	4.1 ± 3.9	3.8 ± 3.5	.65
Hospitalization or ED visit for asthma in previous 12 mo	1.1 ± 2.1	1.0 ± 1.5	.63
Lung function and blood gazes			
FEV_1, z-score	−1.87 ± 1.39	−2.14 ± 1.19	.23
Bronchodilator response	34 (56)	36 (47)	.38
FEV_1/FVC, z-score	−1.48 ± 1.41	−1.67 ± 1.51	.46
RV/TLC, z-score	1.71 ± 1.82	1.44 ± 1.93	.43
Lung hyperinflation	27 (52)	24 (35)	.10
PaO_2, kPa	12.3 ± 1.8	11.8 ± 1.8	.16
$PaCO_2$, kPa	4.8 ± 0.5	4.9 ± 0.5	.07
Questionnaire			
ACT	11.8 ± 4.3	14.3 ± 3.5	**.0006**
AQLQ	3.9 ± 1.0	4.5 ± 1.0	**.0004**
NQ	30.8 ± 10.5	20.0 ± 8.5	**<.0001**
SF36 Physical Functioning	51.0 ± 21.9	64.6 ± 21.2	**.0005**
SF36 Mental Health	53.1 ± 19.9	62.5 ± 19.5	**.007**
Treatment			
High-dose ICS + LABA	59 (97)	74 (96)	.85
LAMA	10 (16)	12 (16)	.90
Daily OCS	15 (25)	22 (29)	.74
Omalizumab	12 (20)	9 (12)	.29
Comorbidities			
Obesity	14 (23)	25 (32)	.3
BMI, kg/m^2	26.3 ± 5.3	27.5 ± 5.3	.16
CRS	52 (85)	53 (69)	**.04**
CRSwNP	19 (31)	26 (34)	.92
Respiratory allergies	39 (64)	53 (69)	.67
Anxiety HAD A score	9.0 ± 4.2	7.5 ± 4.2	**.047**
Depression HAD D score	6.1 ± 4.9	4.1 ± 3.7	**.01**
GERD	37 (61)	31 (40)	**.03**
Obstructive sleep apnea	9 (15)	10 (13)	.96
Hypertension	10 (16)	10 (13)	.75
Diabetes	4 (7)	1 (1)	.24

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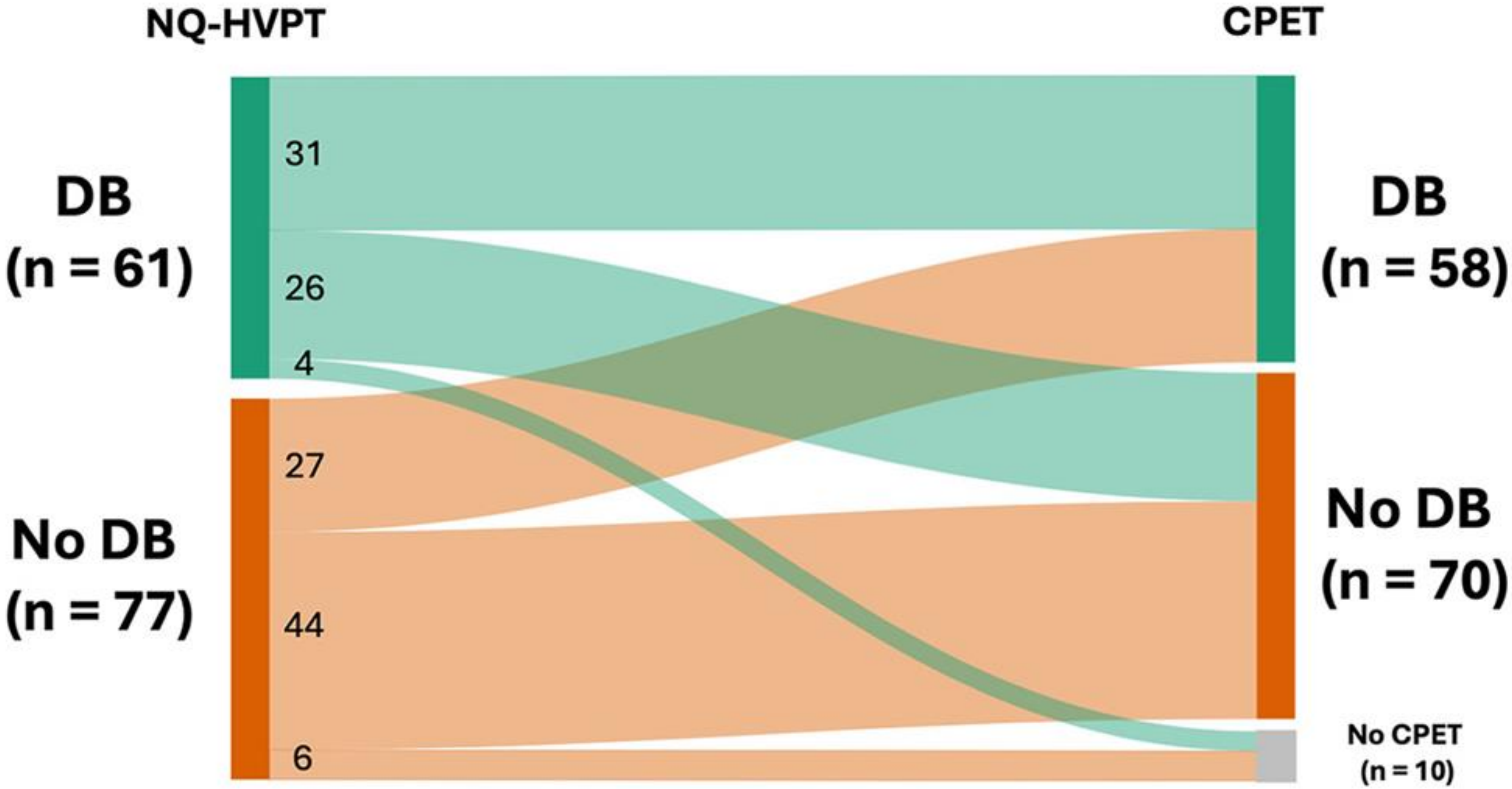
Reclassification of dysfunctional breathing with CPET



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Diagnosis of CPET Dysfunctional Breathing in Severe Asthma

Results

TABLE III. Characteristics of patients with severe asthma comparing those with and without DB defined by CPET*

	DB (according to CPET) (n = 58)	No DB (n = 70)	Overall (n = 128)	*P* value†
Demographic				
Age, y	42.2 ± 12.6	47.8 ± 12.8	45.3 ± 13.0	**.015**
Female sex	47 (81)	39 (56)	86 (67)	**.004**
Asthma variables				
Asthma duration, y	17.3 ± 14.1	26.1 ± 15.6	22.2 ± 15.5	**.001**
Lung function and blood gases				
FEV_1, z-score	−1.69 ± 1.21	−2.39 ± 1.27	−2.07 ± 1.29	**.002**
Bronchodilator response	35 (60)	33 (47)	68 (53)	.19
FEV_1/FVC, z-score	−1.27 ± 1.15	−1.90 ± 1.61	−1.62 ± 1.45	**.01**
RV/TLC, z-score	1.14 ± 1.78	1.77 ± 1.49	1.49 ± 1.65	**.048**
Lung hyperinflation	15 (29)	32 (52)	47 (42)	**.03**
PaO_2, kPa	12.5 ± 1.8	11.6 ± 1.7	12.0 ± 1.8	**.008**
$PaCO_2$, kPa	4.8 ± 0.5	5.0 ± 0.5	4.9 ± 0.5	.09
Questionnaire				
ACT	13.0 ± 4.0	13.3 ± 4.0	13.1 ± 4.0	.70
AQLQ	4.2 ± 1.1	4.3 ± 1.1	4.2 ± 1.1	.55
NQ	26.1 ± 11.2	24.1 ± 9.9	25.0 ± 10.5	.32
SF36 Physical Functioning	55.5 ± 21.3	60.5 ± 23.0	58.2 ± 22.3	.23
SF36 Mental Health	59.3 ± 20.8	59.0 ± 19.4	59.1 ± 19.9	.95

Compared to Nijmegen/hyperventilation test criterion those with CPET Dysfunctional Breathing patients were younger and had a better FEV1

Diagnosis of Dysfunctional Breathing in Severe Asthma

CONCLUSIONS:

- The diagnostic agreement between Nijmegen + Hyperventilation test and CPET is poor and both modalities may identify different DB patterns.

- The combination of NQ and HVPT seems to reflect the global, unspecific burden of asthma on QoL.

- The CPET may be a more reliable tool for diagnosing DB in asthma patients, better reflecting the distinct role of DB as a comorbidity in asthma

CLINICAL IMPACT:

- Dysfunctional breathing is recognized as relevant comorbidity (or mimicker) of asthma
- No evidence-based treatment for dysfunctional breathing

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Evaluation of the effect of multimorbidity on difficult-to-treat asthma using a novel score (MiDAS): a multinational study of asthma cohorts

Ramesh J Kurukulaaratchy, Anna Freeman*, Aruna T Bansal, Latha Kadalayil, Eve Denton, Vanessa Clark, Peter G Gibson, Judit Varkonyi-Sepp, Ben Ainsworth, J J Hudson-Colby, Adam Lewis, Chellan Eames, Liuyu Wei, Wei Chern Gavin Fong, Ratko Djukanovic, Sanja Hromis, Tunn Ren Tay, Njira Lugogo, Vanessa M McDonald, Mark Hew, Hans Michael Haitchi**

Introduction

High multimorbidity prevalence in patients with difficult-to-treat asthma
Multimorbidity correlation with disease severity is uncertain

Objective

To develop a multimorbidity score (MiDAS) for difficult-to-treat asthma.

Method

- UK Wessex Asthma Cohort of Difficult Asthma (WATCH; n=500) for MiDAS score development
- Replication with multiple clinical outcomes in four international cohorts: Australia, Southeast Asia, USA (n=627).

Kurukulaaratchy RJ, Freeman A, Bansal AT, Kadalayil L, Denton E, Clark V, et al. Evaluation of the effect of multimorbidity on difficult-to-treat asthma using a novel score (MiDAS): a multinational study of asthma cohorts. The Lancet Respiratory Medicine. 2025;13(9):821-32.

Multimorbidity in asthma MiDAS - Cohorts description

Results

	WATCH (UK), n=500	Melbourne (AU), n=236	Newcastle (AU), n=140	Michigan (USA), n=100	Singapore, n=151
Age (years)	53 (16)	52 (14)	56 (15)	57 (15)	52 (17)
Sex					
Female	326 (65%)	156 (66%)	87 (62%)	66 (66%)	75 (50%)
Male	174 (35%)	80 (34%)	53 (38%)	34 (34%)	76 (50%)
BMI (kg/m²)	31 (7)	32 (9)	31 (7)	32 (8)	28 (7)
Adult-onset asthma (≥18 years)	251 (50%)	113 (48%)	65 (48%)*	60 (60%)	82 (54%)
Smoking history					
Current smoker	28 (6%)	10 (4%)	9 (6%)	1 (1%)	15 (10%)
Previous smoker	210 (42%)	86 (36%)	65 (46%)	17 (17%)	27 (18%)
Never smoker	261 (52%)	140 (59%)	66 (47%)	82 (82%)	109 (72%)
Clinical features					
ACT	··	14 (5)	··	15 (6)	17 (5)
ACQ6	2·5 (1·4)	2·5 (1·2)	2·1 (1·1)	2·0 (1·2)	··
FEV_1 (pre-bronchodilator) % predicted	··	66·7 (22)	66·1 (22)	84·6 (26)	68 (22)
FEV_1 (post-bronchodilator) % predicted	76 (23)	··	66 (27)	81 (29)	74 (23)
FEV_1/FVC ratio (pre-bronchodilator)	··	65 (15)	65 (13)	72 (14)	66 (13)
FEV_1/FVC ratio (post-bronchodilator)	66 (15)	··	63 (16)	78 (12)	67 (14)
Comorbidities					
Rhinitis	300 (67%)†	132 (56%)	95 (68%)	95 (95%)	63 (42%)
Gastro-oesophageal reflux disease	315 (65%)‡	128 (54%)	94 (67%)	84 (84%)	54 (36%)
Breathing pattern disorder	232 (49%)§	100 (42%)	67 (48%)	30 (30%)	38 (25%)
Obesity	239 (48%)¶	130 (55%)	71 (51%)	59 (59%)	45 (30%)
NERD	124 (25%)¶	39 (17%)	6 (4%)	12 (12%)	16 (11%)
Bronchiectasis	70 (14%)¶	39 (17%)	13 (9%)	9 (9%)	15 (10%)
Obstructive sleep apnoea	35 (7%)¶	52 (22%)	65 (46%)	45 (45%)	24 (16%)

Data are n (%) or mean (SD). ACQ6=Asthma Control Questionnaire. ACT=Asthma Control Test. AU=Australia. FEV_1=forced expiratory volume in 1 s. FVC=forced vital capacity. NERD=non-steroidal anti-inflammatory drug-exacerbated respiratory disease. WATCH=Wessex Asthma Cohort of Difficult Asthma. *Four patients had missing data. †55 patients had missing data. ‡15 patients had missing data. §24 patients had missing data. ¶Six patients had missing data.

Table 1: Demographic and clinical characteristics of WATCH and replication cohorts

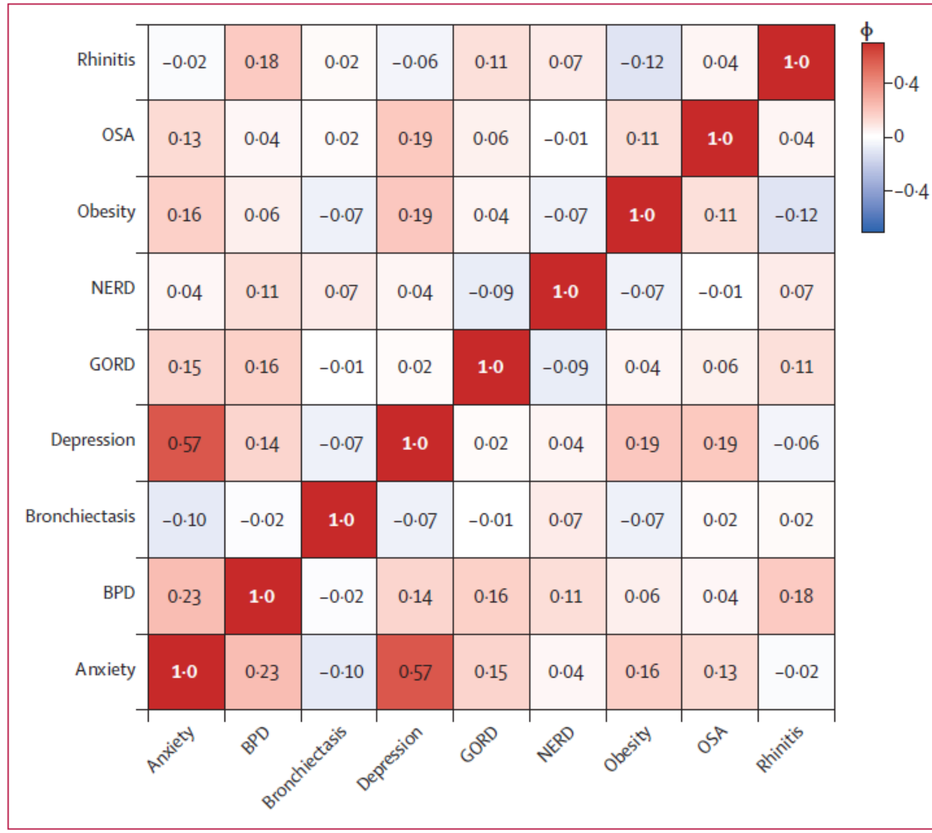

Figure 1: **Heatmap of comorbidities in the WATCH cohort**
Correlation (ϕ coefficient) between comorbidities that showed nominal association with the modified Asthma Severity Scoring System are shown; 95% CIs for the correlations are provided in the appendix (p 9). BPD=breathing pattern disorder. GORD=gastro-oesophageal reflux disease. NERD=non-steroidal anti-inflammatory drug-exacerbated respiratory disease. OSA=obstructive sleep apnoea.

Kurukulaaratchy RJ, Freeman A, Bansal AT, Kadalayil L, Denton E, Clark V, et al. Evaluation of the effect of multimorbidity on difficult-to-treat asthma using a novel score (MiDAS): a multinational study of asthma cohorts. The Lancet Respiratory Medicine. 2025;13(9):821-32.

Multimorbidity in asthma MiDAS - Cohorts description

Results MiDAS score

	Estimated β (95% CI)	p value
Intercept	10·78 (9·96 to 11·60)	<0·0001
Rhinitis	–1·19 (–1·90 to –0·48)	0·0012
Gastro-oesophageal reflux disease	0·83 (0·12 to 1·54)	0·023
Obesity (BMI ≥30)	1·02 (0·34 to 1·71)	0·0036
Breathing pattern disorder	1·02 (0·34 to 1·71)	0·0042
Bronchiectasis	1·18 (0·20 to 2·16)	0·019
Obstructive sleep apnoea	1·36 (0·16 to 2·56)	0·026
NERD	0·78 (–0·02 to 1·58)	0·057

Comorbidities selected for inclusion in MiDAS after branch-and-bound search. MiDAS=Multimorbidity in Difficult Asthma Score. NERD=non-steroidal anti-inflammatory drug-exacerbated respiratory disease.

Table 2: Coefficients for the MiDAS model

7 comorbidities have been selected in the MiDAS score

Negative weight for rhinitis

Higher weight for bronchiectasis & OSA

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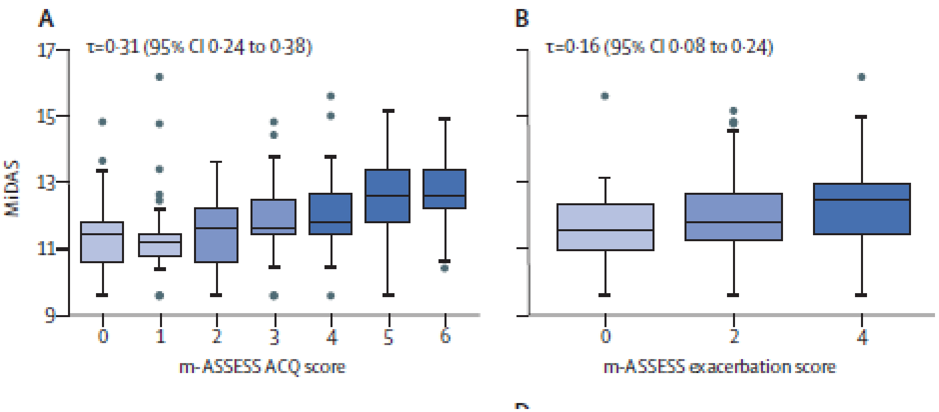
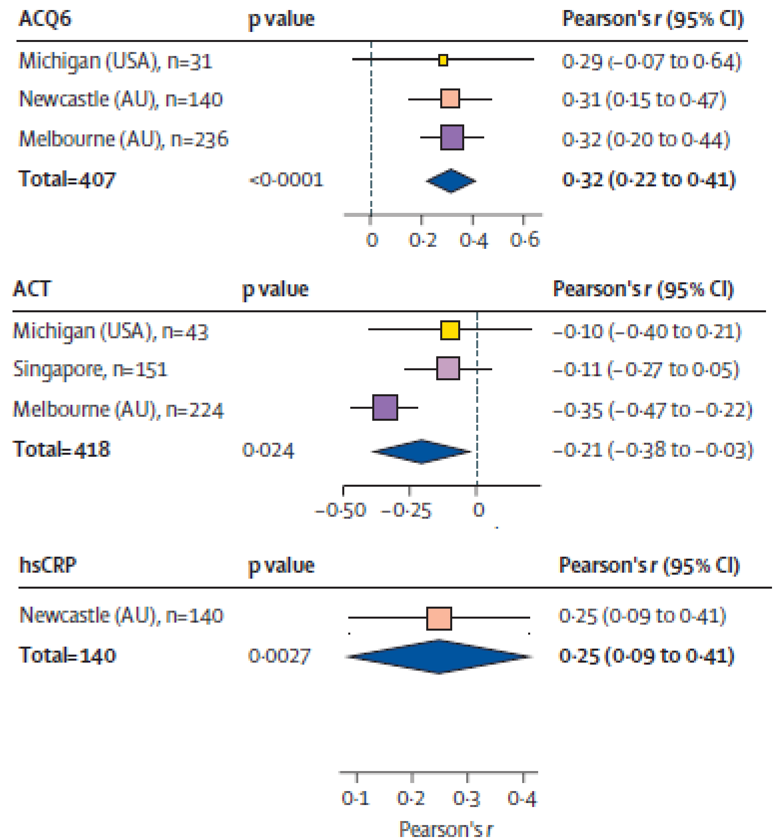
Multimorbidity in asthma MiDAS - Cohorts description

Results MiDAS score





Higher MiDAS scores are predictive of exacerbations, lower quality of life, higher burden of asthma symptoms and systemic inflammation in the validation and replication cohorts

Kurukulaaratchy RJ, Freeman A, Bansal AT, Kadalayil L, Denton E, Clark V, et al. Evaluation of the effect of multimorbidity on difficult-to-treat asthma using a novel score (MiDAS): a multinational study of asthma cohorts. The Lancet Respiratory Medicine. 2025;13(9):821-32.

Multimorbidity in asthma

Conclusions

- MiDAS First multimorbidity score in difficult-to-treat asthma.
    - Bronchiectasis ↔ Low FEV1, maintenance of oral steroids
    - Gastro-Eosophageal Reflux ↔ Increased symptoms
    - Obesity ↔ impaired response to biologics
    - Dysfunctional breathing ↔ poor quality of life, exercise intolerance, overtreatment
    - Obstructive Sleep Apnea ↔ poor asthma control

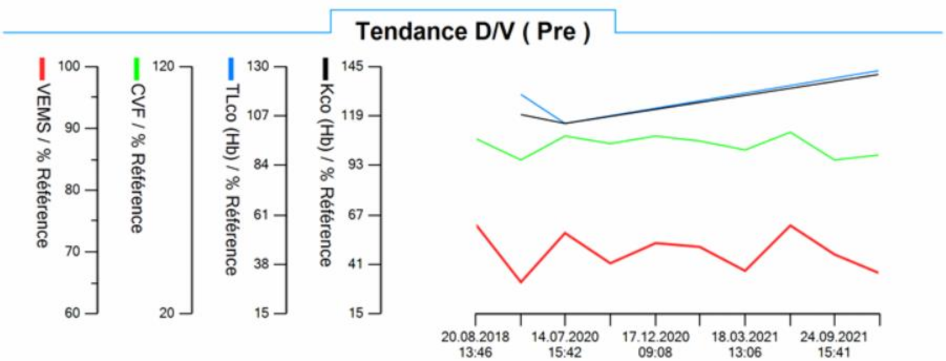
- Strong association of MiDAS with worse asthma outcomes

Clinical impact

- Comorbidities are treatable traits with benefit comparable to those of biologics*

* McDonald VM, Clark VL, Cordova-Rivera L, Wark PAB, Baines KJ, Gibson PG. Targeting treatable traits in severe asthma: a randomised controlled trial. *Eur Respir J* 2020; 55: 1901509.
* Lin T, Pham J, Denton E, et al. Trait profiles in difficult-to-treat asthma: clinical impact and response to systematic assessment. *Allergy* 2023; 78: 2418–27.

Mr Donald, 31 y-o



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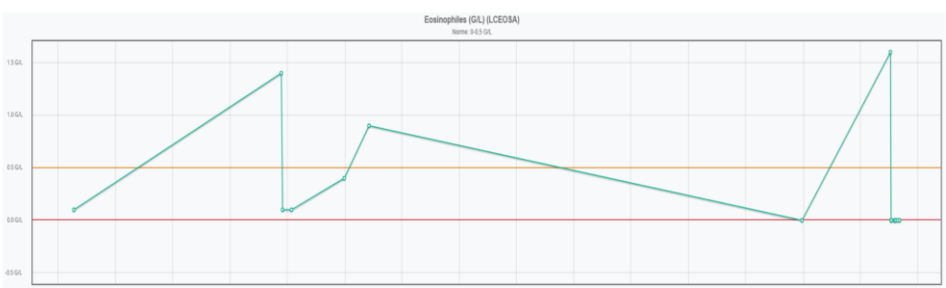
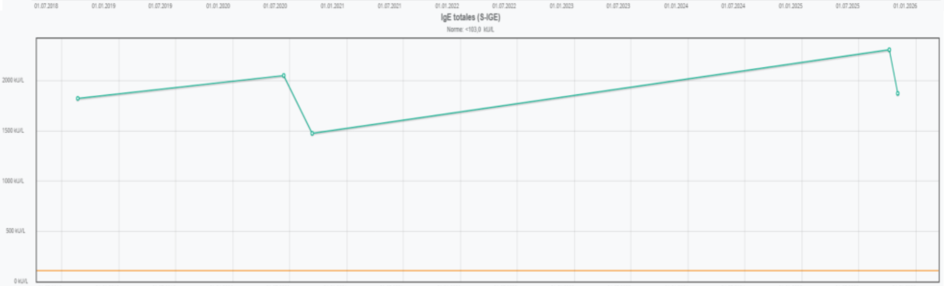
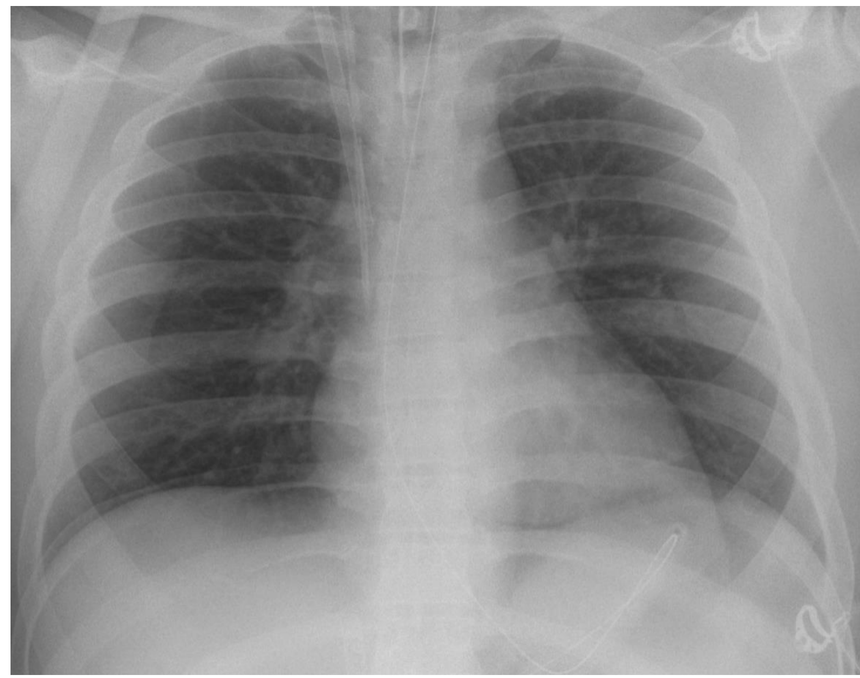
VEMS	l	3,23	2,82	3,16	2,95	3,08	3,06	2,89	3,19
CVF	l	4,68	4,25	4,75	4,60	4,75	4,63	4,44	4,82
TLco (Hb)	mmol/kPa/min		12,3	10,9					
Kco (Hb)	mmol/kPa/min/l		2,1	2,0					
FeNo	ppb		24,0	12,0			15,0		11,0
VR/CPT	%			26					
ACT				18	21	19	20		22





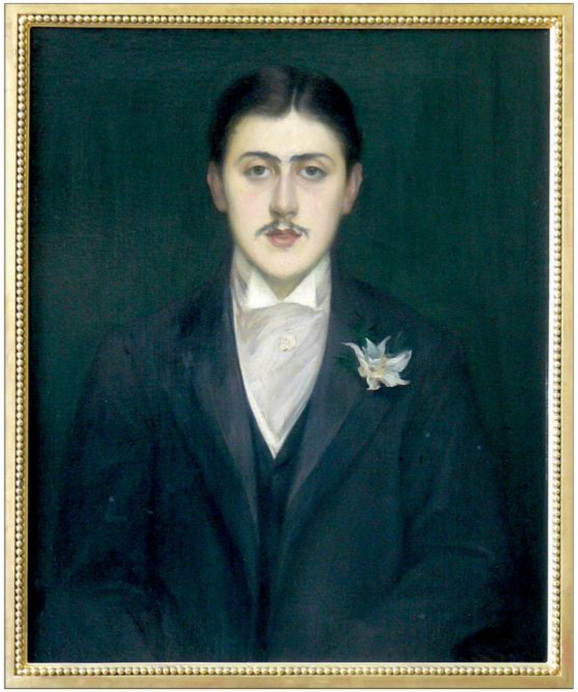
2018-2025 Uncontrolled eosinophilic asthma. Non adherence to therapy

Oct 2025: Near fatal asthma

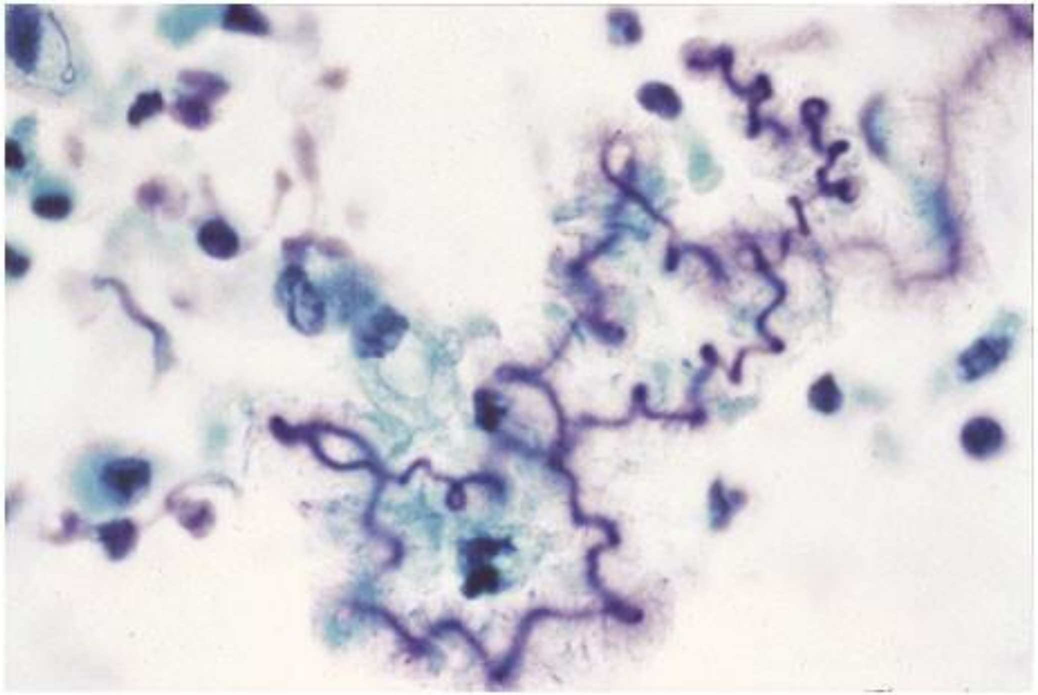


Oct 2025: Near fatal asthma.
Treatment with systemic steroids, invasive ventilation, ECMO and benralizumab

Mucus, eosinophils and asthma-related mortality



Jacques-Emile Blanche, Portrait de Marcel Proust,1892, Huile sur toile.
GrandPalaisRmn (Musée d'Orsay).



A centrifuged sample of her bronchoalveolar-lavage specimen contained microscopic structures identified as Curschmann's spirals (Papanicolaou stain, ×1000)
Blood white-cell count of 18,400 per mm*, with **68% eosinophils**.

Historical Profile - Marcel Proust (1871–1922): a historico-medical review of his fatal asthma Donatella Lippi et al; in Lancet Respiratory 2025
Curschmann's Spirals Phyllis R. Vezza, et al N Engl J Med 1998;339:1043

Treating eosinophilic exacerbations of asthma and COPD with benralizumab (ABRA): a double-blind, double-dummy, active placebo-controlled randomised trial

Sanjay Ramakrishnan, Richard E K Russell, Hafiz R Mahmood, Karolina Krassowska, James Melhorn, Christine Mwasuku, Ian D Pavord, Laura Bermejo-Sanchez, Imran Howell, Mahdi Mahdi, Stefan Peterson, Thomas Bengtsson, Mona Bafadhel

Patients:	Patients with an acute exacerbation of asthma or COPD AND eosinophils >300 cells per µL
Intervention arm 1:	Prednisone 30 mg for 5 days + benralizumab 100 mg (BENRA plus PRED group)
Intervention arm 2:	Benralizumab 100 mg (BENRA group)
Controls:	Prednisone 30 mg for 5 days (PRED group)
Outcomes:	Co-primary outcomes were proportion of treatment failures over 90 days and total visual analogue scale (VAS)

	PRED group (n=53)	BENRA group (n=53)	BENRA plus PRED group (n=52)	Total (n=158)
Demographics				
Females	22 (42%)	32 (60%)	32 (62%)	86 (54%)
Males	31 (58%)	21 (40%)	20 (38%)	72 (46%)
Age, years	59 (14)	55 (17)	58 (14)	57 (15)
Smoking status				
Never	22 (42%)	21 (40%)	20 (38%)	63 (40%)
Former	27 (51%)	27 (51%)	26 (50%)	80 (51%)
Current	4 (8%)	5 (9%)	6 (12%)	15 (9%)
Pack-year history	12·5 (4·8–35·0)	15·0 (8·4–45·8)	21·8 (12·6–38·5)	17·6 (6·8–37·0)
Body-mass index, kg/m²	28·1 (5·1)	29·0 (7·0)	30·0 (7·7)	29·0 (6·7)
Diagnosis				
Asthma	35 (66%)	28 (53%)	25 (48%)	88 (56%)
COPD	13 (25%)	18 (34%)	20 (38%)	51 (32%)
Asthma and COPD	5 (9%)	7 (13%)	7 (13%)	19 (12%)
Exacerbation frequency requiring systemic glucocorticoids in previous year	5 (3–7)	4 (2–5)	3 (2–7)	4 (2–6)
Inhaled treatment				
Glucocorticoids	53 (100%)	51 (96%)	52 (100%)	156 (99%)
Long-acting bronchodilator	50 (94%)	51 (96%)	52 (100%)	153 (97%)
Long-acting antimuscarinic	22 (42%)	24 (45%)	27 (52%)	73 (46%)
Biomarkers				
Peripheral blood eosinophil count at exacerbation*, cells per µL	690 (53%)	520 (41%)	610 (58%)	600 (52%)
Fractional exhaled nitric oxide at exacerbation*, parts per billion	48 (118%)	41 (82%)	35 (108%)	41 (103%)
Visual analogue scale at exacerbation, mm				
Cough	60 (26)	54 (27)	50 (27)	54 (28)
Dyspnoea	65 (21)	59 (25)	61 (24)	62 (23)
Wheeze	52 (29)	54 (29)	54 (30)	53 (29)
Sputum purulence	37 (28)	38 (27)	39 (28)	38 (28)
Sputum production	48 (28)	42 (26)	43 (28)	44 (27)
Exacerbation total	261 (92)	247 (97)	246 (99)	251 (95)

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Results

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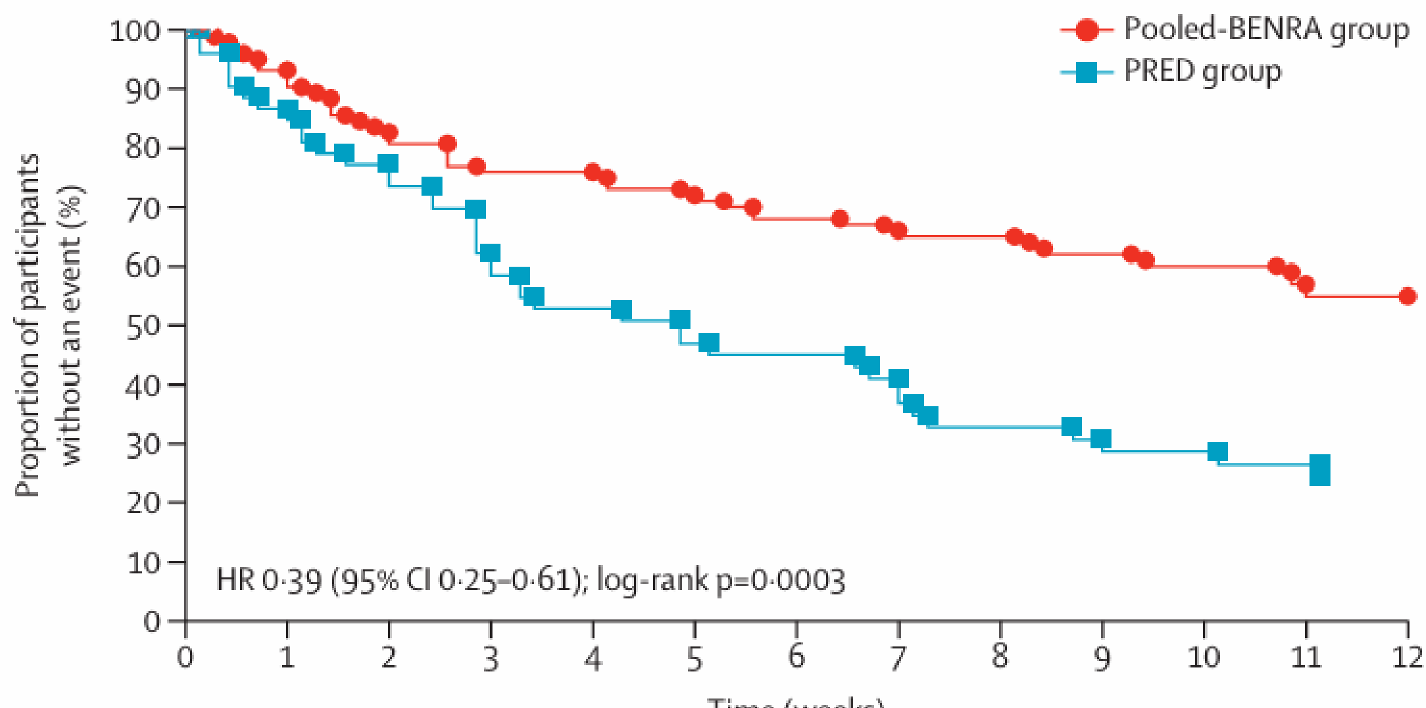

Number at risk													
Pooled-BENRA group	105	98	86	79	79	72	68	66	65	61	59	55	49
PRED group	53	46	41	33	28	24	22	20	16	15	14	12	11

Figure 2: **Kaplan–Meier plot of time to first treatment failure event in the PRED and pooled-BENRA treatment groups**

Results

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	PRED group (n=53)	Pooled-BENRA group (n=105)	p value
Number of patients with treatment failure at 90 days	39 (74%)	47 (45%)	..
Odds ratio (95%CI) *vs* PRED group	..	0·26 (0·13 to 0·56)	0·0005
Change in total VAS symptoms from exacerbation to day 28			
Mean change (95% CI) in mm	103 (75 to 132)	152 (131 to 173)	..
Least-square mean difference *vs* PRED group	..	49 (14 to 84)	0·0065
Change in total VAS cough from exacerbation to day 28			
Mean change (95% CI) in mm	23 (16 to 30)	34 (28 to 39)	..
Least-square mean difference *vs* PRED group	..	10 (2 to 19)	0·020
Change in total VAS dyspnoea from exacerbation to day 28			
Mean change (95% CI) in mm	27 (19 to 34)	34 (28 to 39)	..
Least-square mean difference *vs* PRED group	..	7 (–2 to 16)	0·133
Change in total VAS wheeze from exacerbation to day 28			
Mean change (95% CI) in mm	23 (16 to 29)	36 (32 to 41)	..
Least-square mean difference *vs* PRED group	..	14 (6 to 22)	<0·001
Change in total VAS sputum purulence from exacerbation to day 28			
Mean change (95% CI) in mm	13 (7 to 18)	24 (20 to 28)	..
Least-square mean difference *vs* PRED group	..	11 (4 to 18)	0·002
Change in total VAS sputum volume from exacerbation to day 28			
Mean change (95% CI) in mm	17 (11 to 23)	26 (21 to 30)	..
Least-square mean difference *vs* PRED group	..	9 (2 to 17)	0·016

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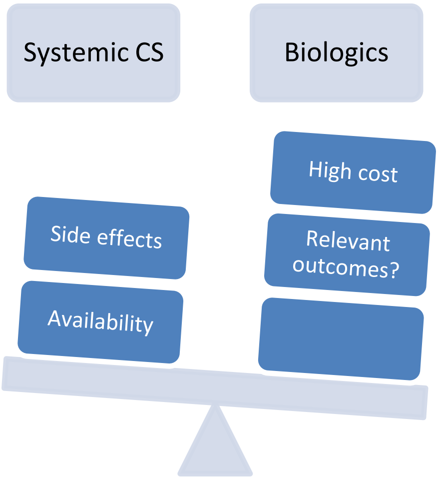
Conclusions

Benralizumab can be used as a treatment of acute eosinophilic exacerbations and achieves better outcomes than the current standard of care with prednisolone alone

Clinical impact

May biologics replace standard
systemic cortico-steroids for asthma exacerbation?



Substantial reduction in oral corticosteroid use after biologics initiation in severe asthma: An analysis based on Swiss pharmacy data

Respiratory Medicine 248 (2025) 108312

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Respiratory Medicine

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Original Research

Substantial reduction in oral corticosteroid use after biologics initiation in severe asthma: An analysis based on Swiss pharmacy data

Pierre-Olivier Bridevaux[a,b,c,*], Arnaud Bourdin[d,e], Isabelle Peytremann-Bridevaux[f], Van Ganse Eric[a,f,g,h]

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Introduction: In RCT, biologics (Bx) consistently improves severe asthma outcomes. We aimed to estimate oral corticosteroid (OCS) use prior to and following Bx initiation and yearly trend of Bx use among unselected SA patients as identified by pharmacy claim data.

Methods: Anonymized dispensation data from retail pharmacies of the IQVIA Switzerland LRx network were retrieved from 2018 to 2023. SA patients aged ≥12 were identified by regular use of fixed-dose combinations over ≥12 months or OCS, or any Bx used for SA. Main outcome was total annual dose (TAD) of OCS before and after Bx initiation.

Strenght/weakness of the design: Unbiased selection of subjects. No confirmation of asthma diagnosis by a clinician

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Results

Prevalence and demographics of patients with severe asthma per year.

Year	2018	2019	2020	2021	2022	2023
Basic respiratory patients[e], N	39,076	42,600	47,894	49,034	49,534	51,774
Patients with likely asthma[f], N (%)[a,b]	26,156 (66.9)	28,371 (66.6)	32,858 (68.6)	33,632 (68.6)	34,632 (69.9)	36,472 (70.4)
Patients with severe asthma[g], N (%)[a,c]	3186 (12.2)	3299 (11.6)	3390 (10.3)	3395 (10.1)	3640 (10.5)	3882 (10.6)
Female n (%)	1788 (56.1)	1880 (57.0)	1926 (56.8)	1916 (56.4)	2093 (57.5)	2204 (56.8)
Age, years n (%)[a,d]						
Median (min-max)	60 (12-102)	61 (12-104)	60 (12-103)	60 (12-100)	60 (12-100)	61 (12-104)

10% of the persons living with asthma met the severe asthma criteria

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Results

Demographics of patients with severe asthma using biologics per year.

Year (Total number of SA patients)	2018 (N = 3186)	2019 (N = 3299)	2020 (N = 3390)	2021 (N = 3395)	2022 (N = 3640)	2023 (N = 3882)
Number of patients using biologics, %	13 (0.4)	40 (1.2)	140 (4.1)	278 (8.2)	394 (10.8)	556 (14.3)
Gender n (%)[a]						
Male n (%)	4 (30.8)	22 (55.0)	71 (50.7)	123 (44.2)	190 (48.2)	262 (47.1)
Female n (%)	9 (69.2)	18 (45.0)	69 (49.3)	155 (55.8)	204 (51.8)	294 (52.9)
Age, years n (%)						
Median (min-max)	62 (38-72)	57 (25-79)	53 (14-80)	54 (15-86)	56 (14-87)	57 (12-92)
Number of patients using maintenance OCS, n (%)	1928 (60.5)	2094 (63.5)	1961 (57.8)	1974 (58.1)	2239 (61.5)	2447 (63.0)

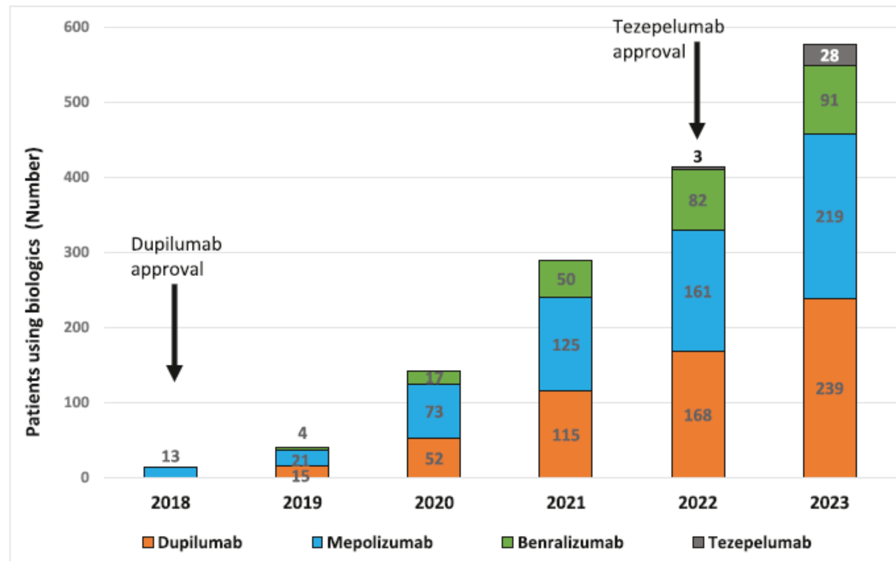

Fig. 2. Biologics dispensations for severe asthma per year from the IQVIA Pharmacy LRx panel Biologics biologic therapy.

(omalizumab not included)

Switzerland biologic and oral steroid use in

2018	0.4%	60.5%
2023	14.3%	63.0%

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Results

Comparison of oral corticosteroids (OCS) dispensations before and after initiation of biologics among all patients with severe asthma (*significant value).

	Years (2018-2023)			
	Year before initiation	Year after initiation	Change (%)	p-value
All biologics				
Total number of initiations, n	532		–	–
Patients with OCS dispensations, n (%)	242 (45.5)	155 (29.1)	−36.0	**<0.0001***
Median OCS dose[a] dispensed (mg)/patient	1200	375	−68.8	**<0.0001***

(omalizumab not included)

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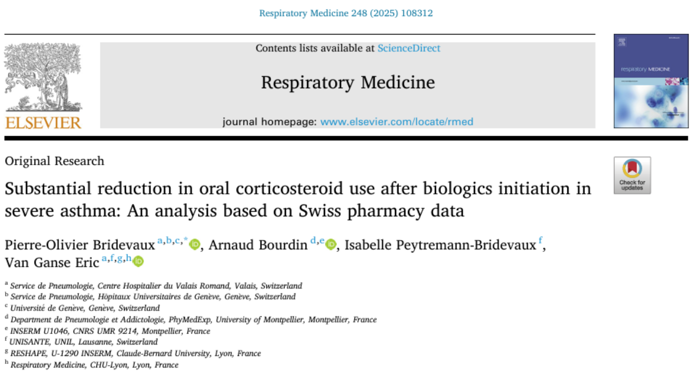
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Conclusions:

- 10% of the identified population with asthma in Switzerland met our criteria for severe asthma
- Biologics were being increasingly initiated over the years
- Overall, in 2023 less than 15% of patients with severe asthma were on biologics
- OCS were still frequently used at high total annual doses
- A large proportion of severe asthma patients initiating Bx had a reduction in OCS use and 36% of them achieved complete discontinuation

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Merci de votre attention

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