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Patient Experience of Moderate Exacerbations in Asthma: Results of Concept Elicitation Interviews

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DISCLOSURES

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- On behalf of all authors, an audio recording of this poster was prepared by Jane R Wells, who did not receive any payment for this recording.
- The presenting author declares the following real or perceived conflicts of interest during the last 24 months in relation to this presentation: Jane R Wells is employed by Adelphi Values.
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Introduction and objectives

- Key long-term goals of asthma management include good symptom control and minimization of future risk of exacerbations, airflow limitation, hospitalization and treatment side-effects.[1,2]
- Identification of moderate asthma exacerbations can be challenging, leading to under treatment and progression to a severe event.[3]
- The joint ATS/ERS statement on asthma control and exacerbations defines a moderate exacerbation as a deterioration in symptoms and lung function and increased rescue bronchodilator use lasting for ≥2 days, not warranting systemic corticosteroid use and/or hospitalization (ie, severe exacerbation).[3,4]
- Whilst this definition is useful, there is limited published information regarding the impact of moderate exacerbations on the patient and their daily lives.
- Therefore, we conducted qualitative interviews in adults with asthma to explore the patient experience of moderate asthma exacerbations and their impact on functioning and HRQoL.

ATS, American Thoracic Society; ERS, European Respiratory Society; HRQoL, health-related quality of life

1. GINA Report, Global Strategy for Asthma Management and Prevention [https://ginasthma.org/gina-reports/ [accessed March 22, 2021]; 2. Lloyd A, et al. Prim Care Respir J 2007;16:22–7; 3. Virchow JC, et al. Respir Med 2015;109:547–56; 4. Luskin AT, et al. J Allergy Clin Immunol Pract 2014;2:544–52.

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Methods

STUDY DESIGN

- Cross-sectional qualitative study conducted in the USA and Germany recruiting patients with moderate or severe asthma who had experienced a moderate asthma exacerbation within the past 30 days.
- Semi-structured concept elicitation telephone interviews exploring patient experience of a moderate asthma exacerbation were audio-recorded and transcribed verbatim for analysis.*
- Interview topics included: language used to describe exacerbations, duration, frequency and triggers, symptoms experienced during the recent moderate exacerbation, impacts on functioning and HRQoL, steps taken to treat exacerbations and comparison of the most recent exacerbation with more severe exacerbations if experienced.

STUDY POPULATION

- Patients ≥18 years of age with moderate or severe asthma treated with ICS/LABA and with a moderate exacerbation within 30 days of recruitment, using the ATS/ERS definition were identified by clinicians.[1]
- Exclusion criteria: history/current diagnosis of any clinically significant pulmonary diseases or abnormalities other than asthma; first asthma diagnosis ≥40 years of age; current/former smokers (history of ≥10 pack years); severe asthma exacerbation within the past 90 days; prescribed/taken OCS (or additional OCS for those on regular systemic corticosteroid treatment) to treat asthma for >2 days within the past 30 days.
- Patients with COVID-19 symptoms at screening or reporting symptoms on the day of the interview were also ineligible to participate.

*Thematic analysis was conducted using Atlas.Ti 8 software version 8. Patient sociodemographic and clinical characteristics were summarized using descriptive statistics. Conceptual saturation (ie, the point at which no new concepts are likely to emerge with continued data collection) was assessed to ensure all aspects of the patient experience were collected.

ATS, American Thoracic Society; ERS, European Respiratory Society; HRQoL, health-related quality of life; ICS, inhaled corticosteroid; LABA, long-acting β_2-agonist; OCS, oral corticosteroid

1. Virchow JC, et al. Respir Med 2015;109:547–56.

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Patient sociodemographic and clinical characteristics

- 31 patients took part in the telephone interviews (23 from the USA and 8 from Germany); 3 US patients were excluded because descriptions of their most recent moderate asthma exacerbation violated the eligibility criteria.
- All recruitment quotas were met.

	USA (n=20)	Germany (n=8)	Total (n=28)
Age, years, mean (SD)*	41.3 (16.3)	43.1 (15.6)	41.8 (15.8)
Sex, female, n (%)*	11 (55)	5 (63)	16 (57)
Race, n (%)*			
White/Caucasian/European	12 (60)	8 (100)	20 (71)
Mixed race	3 (15)	0	3 (11)
African American/African Heritage	2 (10)	0	2 (7)
Mexican	2 (10)	0	2 (7)
Native Hawaiian or other Pacific islander	1 (5)	0	1 (4)
Clinician-reported asthma severity level, n (%)			
Mild	2 (10)	0	2 (7)
Moderate	10 (50)	6 (75)	16 (57)
Severe	8 (40)	2 (25)	10 (36)
Age of asthma diagnosis, years, n (%)			
0–17	5 (25)	2 (25)	7 (25)
18–25	9 (45)	2 (25)	11 (39)
26–35	3 (15)	3 (38)	6 (21)
36–<40	3 (15)	1 (13)	4 (14)
Asthma control test (ACT)*, at screening			
Mean (SD)	14.75 (3.6)	12.50 (2.9)	14.11 (3.5)
Well controlled (≥20), n (%)	5 (25)	0	5 (18)
Not well controlled (16–19), n (%)	9 (45)	0	9 (32)
Very poorly controlled (≤15), n (%)	6 (30)	8 (100)	14 (50)

	USA (n=20)	Germany (n=8)	Total (n=28)
Medication step needed to maintain control, n (%)			
GINA Step 2	8 (40)	0	8 (29)
GINA Step 3	3 (15)	2 (25)	5 (18)
GINA Step 4	9 (45)	5 (63)	14 (50)
GINA Step 5	0	1 (13)	1 (4)
Maintenance medication, n (%)†			
LTRA	8 (40)	4 (50)	12 (43)
ICS/LABA	12 (60)	5 (63)	17 (61)
ICS/LABA/LAMA	0	3 (38)	3 (11)
ICS	7 (35)	0	7 (25)
LABA	0	1 (13)	1 (4)
Monoclonal antibody	3 (15)	6 (75)	9 (32)
LAMA/LABA	2 (10)	0	2 (7)
LAMA	0	3 (38)	3 (11)
SABA	1 (5)	1 (13)	2 (7)

*Variables used for patient sampling quotas; †patients may have been on multiple different therapies.
ICS, inhaled corticosteroid; LABA, long-acting β_2-agonist; LAMA, long-acting muscarinic antagonist; LTRA, leukotriene receptor antagonist; SABA, short-acting β_2-agonist; SD, standard deviation
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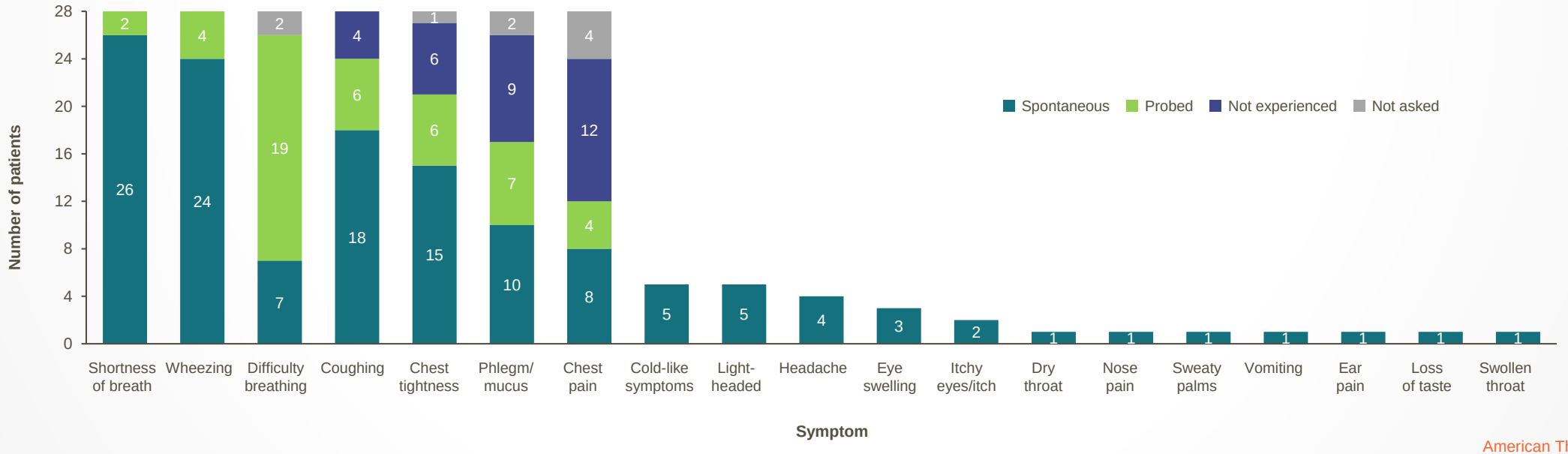
Description, duration, and frequency of moderate exacerbations

	Total (n=28)
Terms/adjectives used*, n (%)	
Asthma attack	12 (43)
Flare up	8 (29)
Deterioration	2 (6)
Episode	1 (3)
Black day	1 (3)
Difficulty breathing	1 (3)
Pushed too hard	1 (3)
Scary	3 (9)
Aggravating	1 (3)

	Total (n=28)
Duration (start to recovery), n (%)	
2 days	7 (25)
2–3 days	5 (18)
3 days	5 (18)
3–4 days	2 (6)
5 days	2 (6)
6 days	1 (3)
7 days	1 (3)
10 days	3 (9)
1 month	1 (3)
Unclear	1 (3)

	Total (n=28)
Frequency, n (%)	
Every 3 days	1 (3)
2–4 times a month	5 (18)
Once every 1–2 months	7 (25)
Once every 3–4 months	5 (18)
Once or twice a year	4 (12)
Once every 2 years	1 (3)
Varies over the month	1 (3)
Varies depending on the season	2 (6)
Not reported	2 (6)



*Two patients reported more than one descriptor.

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Patient quotes describing why symptoms were most bothersome

Symptom	Reason (where given) for why symptom reported as most bothersome*		Supporting quotes
Shortness of breath (n=21)†	• Worry/anxiety (n=3) • Fear (n=3) • Limits activity (n=3) • Panic (n=2) • Hard to breathe (n=2)	• Disruptive (n=1) • Annoying (n=1) • Like suffocating (n=1) • Scary (n=1)	"Um, it just causes me like the most worry and um, yeah, I guess that's, that's why that makes it the most bothersome." (USA-03) "But when this shortness of breath comes, especially if it's the middle of the day, then it's super disruptive." (Germany-31) "**And why was that the most bothersome?** Just because it's really hard to breathe." (USA-03)
Coughing (n=6)†	• Aggravating (n=1) • Intense (n=1) • Hard coughing leads to chest pain (n=1)	• Self-conscious (n=1) • Disruptive (n=1)	"…probably the coughing cuz it's really, it's like really an intense cough." (USA-02) "It just gets a harder and harder cough where it makes my chest feel very sore at the end." (USA-04) "**What was the most disruptive thing?** The coughing." (Germany-30)
Chest tightness (n=6)†	• Cannot continue with daily tasks (n=1) • Disruptive (n=1)	• No reason given (n=2)	"That what makes me feel that sometimes I cannot continue on my daily… it bothers me when I'm doing my daily tasks." (USA-08) "The feeling of tightness in my chest" (Germany-26)
Wheezing (n=4)†	• Self-conscious (n=1) • More persistent than other symptoms (n=1)	• Limits activities (n=1) • No reason given (n=1)	"Everybody can hear you wheezing." (USA-01) "**Why the wheezing?** It was more frequent." (USA-11)
Chest pain/discomfort (n=2)†	• Takes a lot out of the patient (n=1)	• No reason given (n=1)	"So, like the chest pain, um, that's just… That, that takes a lot out… So that's usually the one that I want, want to go away the most." (USA-13)

*A symptom was considered most bothersome based on the concept's intensity, frequency, disruption of daily life and cause for worry/panic; †n corresponds to the number of patients who considered the symptom most bothersome, where given.

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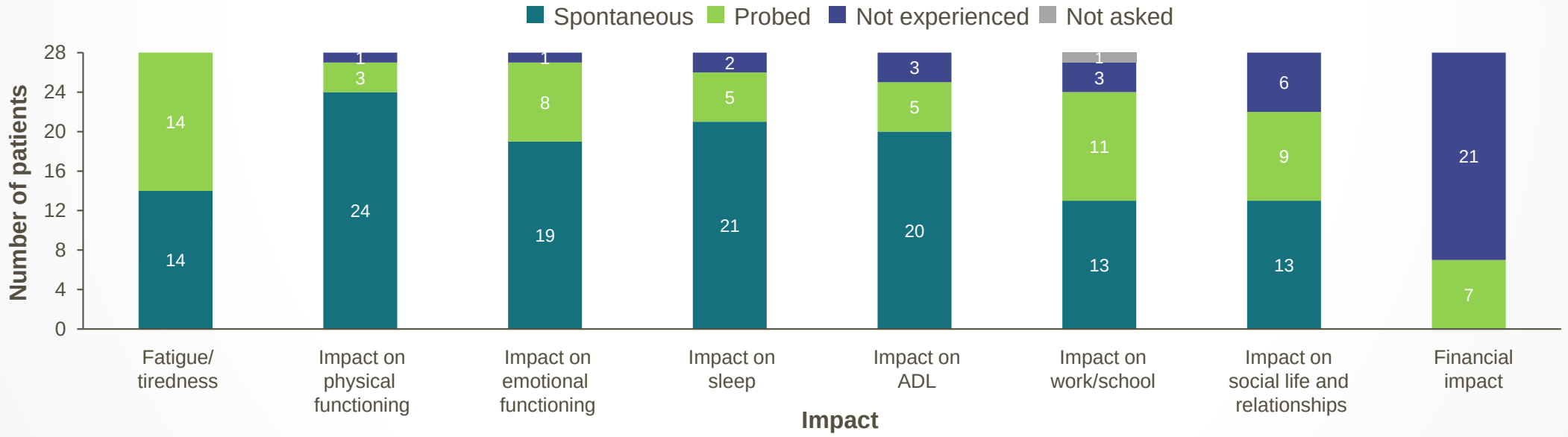
Impact of moderate asthma exacerbations

- All patients reported that their moderate exacerbation resulted in fatigue/tiredness and almost all patients reported impacts on sleep, physical functioning, and emotional functioning.
- Effects on activities of daily living and work/school were also frequently reported with most patients reporting an impact on social life and relationships.
- Sleep impacts included night-time awakenings (n=25; 89%) and difficulty falling asleep (n=12; 43%), impacts on work/school included absences (n=14; 50%) and impacts on social functioning included ability to participate in social activities (n=17; 61%).
- The most impactful aspects of a moderate exacerbation were primarily related to symptoms, with shortness of breath/difficulty breathing (n=12; 43%) the most frequently reported.



ADL, activities of daily living

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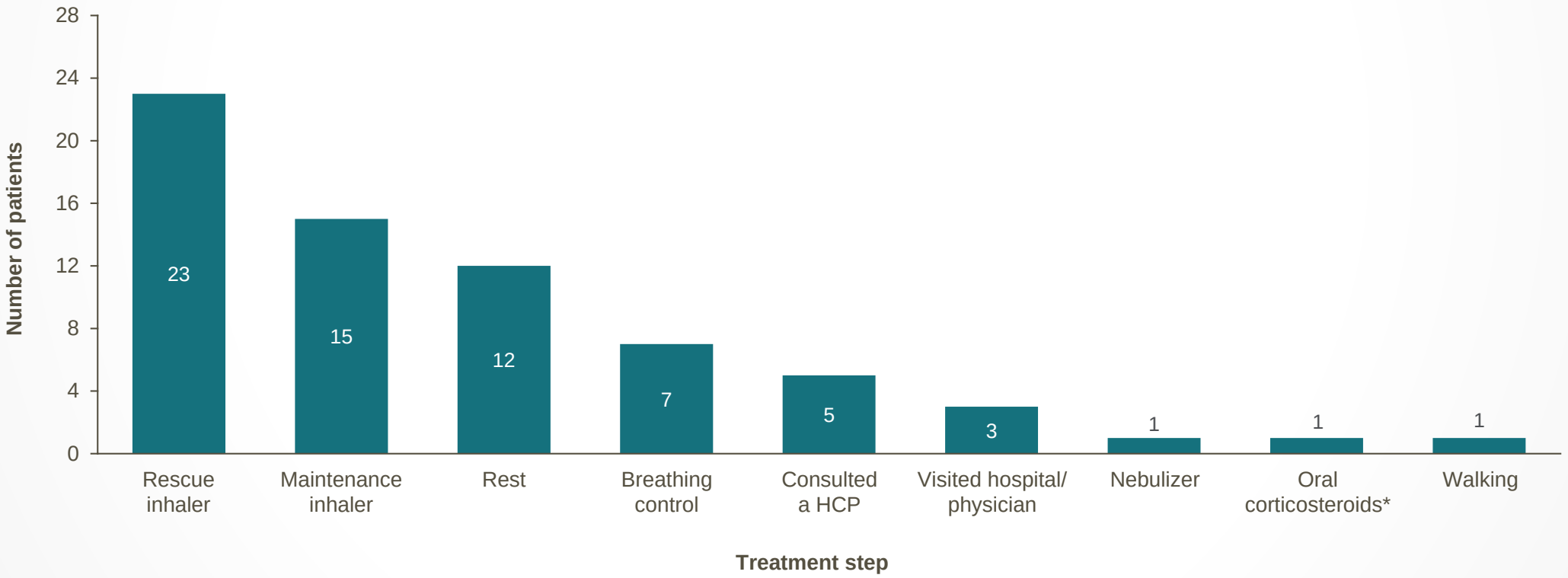
Pharmacological and non-pharmacological management reported by patients for their moderate asthma exacerbations

- Most patients reported using a rescue (USA: n=16 [57%]; Germany: n=7 [25]) or maintenance inhaler (USA: n=12 [43%]; Germany: n=3 [11%]) to alleviate symptoms and impacts of a moderate exacerbation.
- Nine patients (USA: n=8 [29%]; Germany: n=1 [4%]) reported having a treatment plan in place with their healthcare professional to manage a moderate asthma exacerbation.



*Oral corticosteroids (OCS) were prescribed as an emergency treatment for the moderate exacerbation. The definition of a moderate exacerbation applied in this study allowed the use of OCS for ≤2 days.
HCP, healthcare professional

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Conclusions

- In line with the ATS/ERS definition of a moderate exacerbation, patients reported increased frequency, severity, and duration of core asthma symptoms from their typical daily experience: sleep disturbances and increased medication use during a moderate exacerbation.
- Increased symptoms lead to fatigue, emotional distress and avoidance of physical activity, activities of daily living, work, and social activities.
- Patients often reported the timing of each exacerbation symptom in comparison with other symptoms, suggesting that the order in which symptoms manifest was important to them.
- Only a third of patients reported that they had an exacerbation treatment plan in place with their healthcare professional, highlighting a potential need to seek additional treatment for an exacerbation.
- Although challenges may exist in identifying moderate exacerbations in clinical practice as most patients do not seek healthcare for moderate exacerbations, the impact on patient HRQoL can be substantial.

ATS, American Thoracic Society; ERS, European Respiratory Society; HRQoL, health-related quality of life

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CO-AUTHORS' DISCLOSURES

- S Zhang, W Meeraus, A Fowler, and D Slade are employed by and hold stocks or shares in GSK.
- M Tabberer was an employee of GSK at the time of the study.
- D Chandler is employed by Adelphi Values.