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Real-World Reduction of Oral Corticosteroid Use In Patients Treated With Dupilumab and With Moderate-To-Severe Asthma

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BACKGROUND

- Patients with severe asthma are reported to use systemic corticosteroids (SCS) more frequently and at high dosages; they are at increased risk of corticosteroid-related adverse events[1]
- Dupilumab efficacy in oral corticosteroid (OCS) sparing was demonstrated in phase 3 VENTURE (NCT02528214), with a reduction of OCS dose by 70% for patients treated with dupilumab who were glucocorticoid dependent[2]

OBJECTIVE

This real-world analysis investigated the reduction in OCS use in patients treated with dupilumab, both overall cohort and with OCS-dependent moderate-to-severe asthma

METHODS

- The retrospective single-arm study analyzed 780 patients with moderate-to-severe asthma treated with dupilumab
- 141 OCS-dependent patients were included (defined as average OCS daily dose ≥ 5 mg/day prednisone equivalent during at least 60 days before dupilumab initiation)

CONCLUSION

Treatment with dupilumab reduced the number of days with OCS use, cumulative dose of OCS and the proportion of patients who used OCS ≥ 90 days, both in OCS-dependent and overall cohort population.

RESULTS

Table 1. Dupilumab reduced OCS in patients with moderate-to-severe asthma after a 12-month follow-up

Characteristic measured	Baseline	Follow-up	Relative difference, %	*P* value
Any OCS use, n (%)				
OCS-dependent population (N = 141)	141 (100)	112 (79.4)	–20.6	< 0.0001
Overall Cohort (N = 780)	664 (85.1)	434 (55.6)	–34.7	< 0.0001
Cumulative OCS dose, mg (prednisone-equivalent doses), mean (SD)				
OCS-dependent population (N = 141)	3,485.5 (3,306.0)	2,323.0 (2,695.1)	–33.4	0.0096
Overall Cohort (N = 780)	1,349.7 (1987.9)	1,153.1 (1928.6)	–14.6	0.0009
Number of days OCS used, mean (SD)				
OCS-dependent population (N = 141)	139.8 (83.4)	105.4 (98.8)	–24.6	0.32
Overall Cohort (N = 780)	50.4 (69.2)	48.1 (74.5)	–4.54	0.17
OCS use for ≥ 30 days, n (%)				
OCS-dependent population (N = 141)	141 (100)	91 (64.5)	–35.5	< 0.0001
Overall Cohort (N = 780)	294 (37.7)	162 (20.8)	–44.8	< 0.0001
OCS use for ≥ 60 days, n (%)				
OCS-dependent population (N = 141)	133 (94.3)	68 (48.2)	–48.9	< 0.0001
Overall Cohort (N = 780)	144 (18.5)	101 (12.9)	–30.3	< 0.0001
OCS use for ≥ 90 days, n (%)				
OCS-dependent population (N = 141)	93 (66.0)	54 (38.3)	–42.0	< 0.0001
Overall Cohort (N = 780)	99 (12.7)	72 (9.2)	–27.6	0.0007

SD, standard deviation

Table 2. Dupilumab reduced severe asthma exacerbations[a] in patients treated with dupilumab after 12-month follow-up

Characteristic measured	Baseline	Follow-up	Absolute difference	Relative difference, %	*P* value
Experienced any severe asthma exacerbations, n (%)					
OCS-dependent population (N = 141)	118 (83.7)	71 (50.4)	–33.3	**–39.8**	< 0.0001
Overall Cohort (N = 780)	551 (70.6)	285 (36.5)	–34.1	**–48.3**	< 0.0001
Number of severe asthma exacerbations experienced, mean (SD)					
OCS-dependent population (N = 141)	3.5 (2.5)	2.4 (1.9)	–1.11	**–31.7**	0.015
Overall Cohort (N = 780)	2.5 (1.8)	2.0 (1.7)	–0.51	**–20.3**	0.0006

[a]An inpatient visit with asthma as primary, admitting, or discharging diagnosis, an ER visit for asthma as primary, admitting, or discharging diagnosis, or an acute course of SCS (oral or injectable corticosteroids). Acute courses of OCS are a prescription of OCS ≤ 30-day supply and with an asthma diagnosis within 7 days of the asthma-related medial visit. SCS prescribed within 7 days will be considered as 1 event.
ER, emergency room; SCS, systemic corticosteroid.

Table 3. ICS usage in patients treated with dupilumab at baseline vs 12-month follow-up

Characteristic measured	Baseline	Follow-up	Absolute difference	Relative difference, %	*P* value
Low dose of ICS used, n (%)					
OCS-dependent population (N = 141)	34 (24.1)	27 (19.1)	–5	–20.8	0.21
Overall Cohort (N = 780)	172 (22.1)	123 (15.8)	–6.3	–28.51	<0.0001
Medium dose of ICS used, n (%)					
OCS-dependent population (N = 141)	40 (28.4)	28 (19.1)	–8.5	–29.9	0.0227
Overall Cohort (N = 780)	149 (19.1)	106 (13.6)	–5.5	–28.8	<0.0001
High dose of ICS used, n (%)					
OCS-dependent population (N = 141)	63 (44.7)	47 (33.3)	–11.4	–25.5	0.009
Overall Cohort (N = 780)	363 (46.5)	230 (29.5)	–17	–36.6	<0.0001

ICS, inhaled corticosteroids

References: 1. O'Byrne PM, et al. Am J Respir Crit Care Med. 2009;179:19-24. 2. Rabe KF, et al. N Engl J Med. 2018;378:2475-85.

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