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Annual Trends in Medicare Part D Prescription Claims for Dupilumab 2017 to 2019

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INTRODUCTION

Disease control for moderate to severe atopic dermatitis (AD) has been primarily achieved with phototherapy and non-specific immunomodulators, cyclosporine, and methotrexate. These treatments have, however, been associated with many unfavorable side effects.

In 2017, dupilumab was Food and Drug Administration (FDA)-approved as a first-line treatment for moderate-to-severe AD, and it has demonstrated a favorable safety profile. However, it is currently the most expensive treatment for AD, averaging $30,000 per course for one year.[1] A significant economic burden of AD exists, and it is important for healthcare providers, both dermatologists and non-dermatologists alike, to be familiar with use of dupilumab to better facilitate treatment discussions and provide optimal patient care. In this study, we quantify dupilumab's national use and cost by surveying the Medicare Part D Prescriber dataset. Additionally, we tabulated the total number of claims and beneficiaries over a 3 year period, as well as the characteristics of prescribers with ≥11 annual claims.

During the study period, the total number of Medicare Part D claims for dupilumab and the total number of beneficiaries increased by 72,778 and 11,187, respectively (Table 1). The mean cost per fill remained steady, about $3,000 over the 3-year period. The total cost of claims increased exponentially, starting at 26.6 million in 2017 and reaching 265.7 million in 2019. There was also an increasing trend toward high-volume prescribers, with dermatologists constituting the majority (54.7%; Table 2). However, the quickest rate of adoption was amongst pulmonologists for the treatment of moderate-to-severe asthma, with an average annual increase of 1024.7%. Geographically, the highest use of dupilumab in the US was in the southern states.[2]

Although the high cost did not limit its use, the increase in dupilumab use is likely due to limited effective treatment options for moderate-to-severe AD and the overall efficacy of dupilumab.[2] Its increased use also reflects greater physician confidence, given numerous clinical trials and real-world evidence demonstrating dupilumab's favorable safety profile as a long-term treatment option. However, dupilumab has high direct costs, with over $260 million in 2019 in Medicare Part D claims. A recent study revealed that the mean annual pharmacy costs for dupilumab were $32,885, whereas pharmacy costs for systemic corticosteroids and immunosuppressants were $5,858 and $12,227, respectively.[4]

TABLE 1.

Annual Trends in Medicare Part D Dupilumab Claims, Costs, and Beneficiaries from 2017 to 2019

Utilization statistic	All years	2017	2018	2019	Average annual rate of change (%)	*P*-value
Total claims (initial and refills)	121,555	8,371	32,035	81,149	211.4	<.001
Normalized total claims per 100,000 national Medicare Part D beneficiaries	268.2	19.5	72.3	176.4	200.8	.008
Total Medicare Part D beneficiary recipients	20,365	1,980	5,218	13,167	157.9	.025
Mean claims per beneficiary	16.6	4.3	6.1	6.2	20.1	.124
Mean standardized 30-day fills per beneficiary	17.4	4.4	6.5	6.5	21.5	.142
Total cost of claims (million $)	394.1	26.6	101.7	265.7	216.0	.008
Mean cost per 30-day fill ($)	9,165	3,037	3,012	3,116	1.3	.008
Total prescribing clinicians	13,227	1,540	3,743	7,944	127.1	.013

The utilization statistics represent the total values among all prescribers, including those with <11 claims, for each given year. Claims were normalized by dividing the number claims by the total number of national Medicare Part D beneficiaries in each given year. The average annual rate of change was calculated through a compound annual growth rate formula and *P*-values were calculated using a linear regression model.

TABLE 2.

Characterization of Prescribers With ≥11 Annual Claims for Dupilumab				
	2017	2018	2019	Average annual rate of change (%)
Number of clinicians prescribing ≥11 claims	142	1096	2734	338.8
Clinician's sex				
Male	111	738	1567	275.7
Female	31	358	1167	513.6
Clinician specialty				
Dermatology	112	710	1352	247.4
Allergy/Immunology	14	125	433	456.1
Pulmonary disease	0	2	253	1024.7
Advanced practice provider	13	229	607	583.3
Internal or family medicine	1	19	67	718.5
Geographic region				
Northeast	343	836	1921	136.7
Midwest	280	662	1399	123.5
South	549	1387	2996	133.6
West	350	841	1596	113.5

*P-values for all categories were significant at <0.001.
Individual attributes of prescribers with <11 annual claims could not be obtained due to dataset privacy regulations. Prescribers with low/moderate utilization are not represented in this table but are included in Table 1. The average annual rate of change was calculated through a compound growth rate formula and *P*-values were calculated using a linear regression model.

After the introduction of dupilumab, the total healthcare cost per patient with AD increased largely due to pharmacy costs and was estimated to be over $20,000 in 2017 to 2018. However, the medical costs per patient undergoing treatment with dupilumab were substantially lower than for those treated with systemic corticosteroids, systemic immunosuppressants, and phototherapy.[4] Although further research is required to establish real-world efficacy, meta-analyses propose greater clinical effectiveness to certain traditional treatments and subsequently lower medical costs.[4] Future studies may also have to consider additional immunomodulators, Janus-kinase (JAK)-inhibitors and other biologics, which are currently undergoing clinical trials for the treatment of AD, as they are showing promising results.[5]

Our analysis was limited by its representative restriction to Medicare D patients, with over 46,000 enrollees in 2019. The aggregated utilization statistics provide a thorough indication of dupilumab-prescribing patterns among all providers; however, the individual attributes of prescribers with <11 annual claims could not be obtained.

DISCLOSURES

Dr Wu has been an investigator, consultant, or speaker for AbbVie, Almirall, Amgen, Arcutis, Aristea Therapeutics, Boehringer Ingelheim, Bristol-Myers Squibb, Dermavant, Dr. Reddy's Laboratories, Eli Lilly, Galderma, Janssen, LEO Pharma, Mindera, Novartis, Regeneron, Sanofi Genzyme, Solius, Sun Pharmaceutical, UCB, Valeant Pharmaceuticals North America LLC, and Zerigo Health. Dr Thyssen is an advisor for AbbVie, Almirall, Arena Pharmaceuticals, Coloplast, OM Pharma, Aslan Pharmaceuticals, Union Therapeutics, Eli Lilly & Co, LEO Pharma, Pfizer, Regeneron, and Sanofi-Genzyme, a speaker for AbbVie, Almirall, Eli Lilly & Co, LEO Pharma, Pfizer, Regeneron, and Sanofi-Genzyme, and received research grants from Pfizer, Regeneron, and Sanofi-Genzyme. The other authors have no conflicts to disclose.

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