Abstract for ATS 2021

Variation in Demographic and Clinical Characteristics of COPD Patients Managed in U.S. Primary Care: Data from a Real-Life COPD Registry

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Rationale: Most patients with COPD are managed by primary care physicians with little known about their management or variability in patient characteristics across healthcare systems in real life. Our aim was to compare the demographic and clinical characteristics of COPD patients managed in five large primary care medical groups in the U.S.

Methods: This is an observational, patient registry study using data from the COPD Optimum Patient Care DARTNet Research Database (COPD-RD) from which the Advancing the Patient Experience (APEX) COPD registry is derived. The APEX in COPD registry collects, integrates, and standardizes retrospective and prospective primary care electronic health record (EHR) data and patient-reported information/outcomes, and plans to include 3,000 COPD patients. COPD patients included in the registry are ≥35 years old at diagnosis, with a COPD diagnosis code [ICD9CM, ICD10CM]. Baseline demographic and clinical EHR data were collected (Dec 2019-Jan 2020) from sites located in TX, OH, CO, NY and NC. Most data extend back as far as 2009.

Results: A total of 17,192 patients with COPD, available for screening were included in this baseline analysis: TX (n=811), OH (n=8,722), CO (n=472), NY (n=1,149) and NC (n=6,038). The majority of patients at each site were female (>54%), over-weight/obese (>60%), and had a high co-morbidity burden, with hypertension predominating (>60%). Some inter-site variability was noted in terms of age, race/ethnicity, exacerbation frequency, treatment pattern and co-morbidity prevalence (Table). The TX site had the greatest prevalence of Hispanic patients, ICS/LABA use and diabetes mellitus, and relatively high rates of depression and asthma. The OH site was characterized by a large Black COPD patient population, highest prescription rates for ICS/LABA/LAMA, and greatest prevalence of GERD and OSA. CO site patients were predominantly white, experienced the fewest exacerbations and had the greatest prevalence of depression. The NY site COPD patients were predominantly Black and Hispanic, experienced most exacerbations, had the greatest ICS use, relatively high ICS/LABA/LAMA use, and had the greatest prevalence of hypertension, osteoarthritis, and asthma. Patients from the NC site tended to be older, had the lowest co-morbidity burden, and a treatment pattern characterized by high LABA/LAMA and ICS/LABA use, and relatively high rates of ICS/LABA/LAMA use.

Conclusion: These data show the heterogeneity in demographic and clinical characteristics of patients diagnosed with COPD who are managed in primary care in the U.S.

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Variable	Texas (n=811)	Ohio (n=8,722)	Colorado (n=472)	New York (n=1149)	North Carolina (n=6,038)
Mean age (SD)	69.6 (11.8)	65.8 (10.9)	69.8 (12.9)	61.6 (10.8)	70.2 (10.8)
Race/ethnicity	N=725	N=8,617	N=365	N=903	N=4,606
Caucasian, n (%)	355 (43.8)	5,075 (58.2)	346 (73.3)	101 (8.8)	3,855 (63.8)
Black, n (%)	25 (3.1)	2,746 (31.5)	0 (0.0)	476 (40.6)	366 (6.1)
Hispanic, n (%)	333 (45.9)	704 (8.2)	16 (4.4)	329 (36.4)	362 (7.9)
Exacerbations last 12 m					
0, n (%)	473 (58.3)	5,044 (57.8)	308 (65.3)	670 (58.3)	4,118 (58.2)
1, n (%)	245 (30.2)	2,089 (24.0)	139 (29.4)	266 (23.2)	1,088 (18.0)
2, n (%)	71 (8.8)	818 (9.4)	18 (3.8)	91 (7.9)	445 (7.4)
3+, n (%)	22 (2.7)	771 (8.8)	7 (1.5)	122 (10.3)	387 (6.4)
Treatment					
LAMA	100 (12.3)	1,055 (12.1)	37 (7.8)	137 (11.9)	798 (13.2)
LABA/LAMA	64 (7.9)	987 (11.3)	25 (5.3)	158 (13.8)	1,031 (17.1)
ICS	11 (1.4)	365 (4.2)	61 (12.9)	288 (25.1)	254 (4.2)
ICS/LABA	370 (45.6)	2,404 (27.6)	123 (26.1)	201 (17.5)	1,872 (31.0)
ICS/LABA/LAMA	141 (17.4)	2,870 (32.9)	22 (4.7)	251 (21.8)	1,374 (22.8)
Co-morbidities					

Hypertension, n (%)	666 (82.1)	6,786 (77.8)	354 (75.0)	1,010 (87.9)	3,672 (60.8)
DM, n (%)	529 (65.2)	4,748 (54.4)	137 (29.0)	461 (40.1)	1,849 (30.6)
Depression, n (%)	471 (58.1)	4,211 (48.3)	410 (86.9)	618 (53.8)	1,530 (25.3)
Anxiety, n (%)	307 (37.9)	3,355 (38.5)	163 (34.5)	337 (29.3)	1,241 (20.6)
OA, n (%)	327 (40.3)	4,546 (52.1)	161 (34.1)	688 (59.9)	1,376 (22.8)
GERD, n (%)	281 (34.6)	4,244 (48.7)	179 (37.9)	486 (42.3)	1,568 (26.0)
OSA, n (%)	239 (29.5)	4,116 (47.2)	163 (34.5)	90 (7.8)	1,687 (27.9)
Asthma, n (%)	325 (40.1)	3,387 (38.8)	128 (27.1)	708 (61.6)	1,165 (19.3)

Conflict of Interest:

Alan Kaplan is a member of the advisory board of, or speakers bureau for, AstraZeneca, Behring, Boehringer Ingelheim, Covis, Grifols, GlaxoSmithKline, Merck Frosst, Novo Nordisk, Novartis, Pfizer, Purdue, Sanofi, Teva, and Trudel.

Barbara Yawn has served on COPD-related advisory boards for GlaxoSmithKline, AstraZeneca, Novartis, and Boehringer Ingelheim, and received COPD-related investigator-initiated research funds from GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, and Novartis.

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Chester Fox declares no conflict of interest.

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Neil Skolnik is on advisory boards for AstraZeneca, Teva, Lilly, Boehringer Ingelheim, Sanofi, Janssen Pharmaceuticals, Intarcia, Mylan, and GlaxoSmithKline; Payment for lectures/speaking engagements from AstraZeneca and Boehringer Ingelheim; Research Support from Sanofi, AstraZeneca, Boehringer Ingelheim, and GlaxoSmithKline.

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Asif Shaikh and **Cathy Mahle** are employees of Boehringer Ingelheim, a co-founder of the APEX COPD initiative.

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David Price has board membership with Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Mylan, Mundipharma, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, Teva Pharmaceuticals, Thermofisher; consultancy agreements with Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Mylan, Mundipharma, Novartis, Pfizer, Teva Pharmaceuticals, Theravance; grants and unrestricted funding for investigator-initiated studies (conducted through Observational and Pragmatic Research Institute Pte Ltd) from AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Mylan, Mundipharma, Novartis, Pfizer, Regeneron Pharmaceuticals, Respiratory Effectiveness Group, Sanofi Genzyme, Teva Pharmaceuticals, Theravance, UK National Health Service; payment for lectures/speaking engagements from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Mylan, Mundipharma, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, Teva Pharmaceuticals; payment for the development of educational materials from Mundipharma, Novartis; payment for travel/accommodation/meeting expenses from AstraZeneca, Boehringer Ingelheim, Mundipharma, Mylan, Novartis, Thermofisher; funding for patient enrolment or completion of research from Novartis; stock/stock options from AKL Research and Development Ltd which produces phytopharmaceuticals; owns 74% of the social enterprise Optimum Patient Care Ltd (Australia and UK) and 74% of Observational and Pragmatic Research Institute Pte Ltd (Singapore); and is peer reviewer for grant committees of the Efficacy and Mechanism Evaluation programme, and Health Technology Assessment.