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The Impact of Administration Modality on Quality of Life for Respiratory Diseases in Japan Based on Patient-Reported Outcomes

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Key points for this study

- ✓ Recent administration modalities for COPD and/or asthma could simplify treatment management.
- ✓ This improvement appears to have an impact on HRQoL, but there are differences by disease.
- ✓ Further research might consider in more detail the impact of administration modality on HRQoL targeting a larger number of patients.

INTRODUCTION

- Recently, triple combination therapy of inhaled corticosteroids (ICS), long-acting β-agonists (LABA) and long-acting muscarinic antagonist (LAMA) has become available for chronic obstructive pulmonary disease (COPD) and asthma in Japan.
- This could simplify treatment management and may have an impact on treatment outcomes.

OBJECTIVE

- This study aimed to examine the impact of administration modality on outcomes in terms of health-related quality of life (HRQoL).

METHODS

- Data from the 2021 Patient Mindscape® study was used to examine the impact of administration modality on HRQoL among COPD and/or asthma patients administered triple therapy (TT) – including fixed-dose combination triple therapy of ICS, LABA, and LAMA (FDTT) or a non-fixed dose combination regimen (non-FDTT). Patient Mindscape® is a nationwide patient survey conducted annually in Japan among 500,000+ patients undergoing drug treatment for 80+ conditions. It collects data on drug treatments used, HRQoL, and other items.
- Patients that reported a COPD and/or asthma diagnosis and continuous TT administration were included. HRQoL was estimated using EQ-5D-5L and EQ-VAS responses. The following definition was applied to categorize administration modality: fixed-dose combination TT (“FDTT”) and those whose TT regimen included a monotherapy (“non-FDTT”).
- Statistic analysis was performed using R version 4.0.3. and version 4.2.1.

RESULTS

1. Patient characteristics

- The details of patient characteristics for this study are shown in Table 1.
- Among 10,734 patients, 1,134 patients were undergoing drug treatment for COPD, 360 patients for asthma and 54 patients for both asthma and COPD overlapped (ACO).
- For drug administration, 538 patients were administrated TT including 351 patients with FDTT and 187 patients with non-FDTT.
- Of the 538 patients administered TT, 124 were COPD patients, 360 were asthma and 54 were asthma and COPD overlap (ACO) patients.

Table1 Patient characteristics for this study

Disease	Total	COPD	Asthma	ACO
Number of patients	10,734 (100%)	1,134 (10.6%)	9,417 (87.7%)	183 (1.7%)
Mean age, years, (SD)	51.9 (13.7)	62.8 (13.7)	50.5 (13.0)	57.0 (14.1)
Gender				
Male	5,060 (47.1%)	925 (8.6%)	4,024 (37.5%)	111 (1.0%)
Female	5,674 (52.9%)	209 (1.9%)	5,393 (50.2%)	72 (0.7%)
Geographical area				
Hokkaido and Tohoku area	1,277 (11.9%)	104 (1.0%)	1,158 (10.8%)	15 (0.1%)
Kanto area	4,356 (40.6%)	477 (4.4%)	3,808 (35.5%)	71 (0.7%)
Chubu area	1,501 (14.0%)	159 (1.5%)	1,317 (12.3%)	25 (0.2%)
Kinki area	1,888 (17.6%)	240 (2.2%)	1,608 (15.0%)	40 (0.4%)
Chugoku and Shikoku area	807 (7.5%)	78 (0.7%)	719 (6.7%)	10 (0.1%)
Kyusyu area	905 (8.4%)	76 (0.7%)	807 (7.5%)	22 (0.2%)
Employment status				
Employed	7,061 (65.8%)	575 (5.4%)	6,377 (59.4%)	109 (1.0%)
Unemployed	3,673 (34.2%)	559 (5.2%)	3,040 (28.3%)	74 (0.7%)
Drug administration				
TT	538 (5.0%)	124 (1.2%)	360 (3.4%)	54 (0.5%)
FDTT	351 (3.3%)	108 (1.0%)	214 (2.0%)	29 (0.3%)
non-FDTT	187 (1.7%)	16 (0.1%)	146 (1.4%)	25 (0.2%)
Other Therapy	10,196 (95.0%)	1,010 (9.4%)	9,057 (84.4%)	129 (1.2%)

Abbreviations: ACO, asthma and COPD overlap; COPD, chronic obstructive pulmonary disease; FDTT, fixed-dose combination triple therapy; non-FDTT, non-fixed dose combination regimen; TT, triple therapy

2. Impact of administration modality on HRQoL

- Details concerning the impact of administration modality on HRQoL are shown in Table 2.
- Among 538 patients administrated TT, mean EQ-5D-5L score was 0.837 and mean EQ-VAS score was 67.9.
- For COPD patients, the mean EQ-5D-5L score was 0.811 overall, with 0.808 for FDTT and 0.832 for non-FDTT. Their mean EQ-VAS score overall was 64.5, with 64.4 for FDTT and 65.2 for non-FDTT.
- For asthma patients, the mean EQ-5D-5L score was 0.849 overall, with 0.864 for FDTT and 0.826 for non-FDTT. Their mean EQ-VAS score was 69.1 overall, with 70.0 for FDTT and 67.8 for non-FDTT.
- For ACO patients, the mean EQ-5D-5L score was 0.819 overall, with 0.842 for FDTT and 0.792 for non-FDTT. Their mean EQ-VAS score overall was 66.9, with 66.1 for FDTT and 67.9 for non-FDTT.

Table2 The impact of administration modality on HRQoL

Disease	Total	COPD			Asthma			ACO		
Modality		Overall	FDTT	non-FDTT	Overall	FDTT	non-FDTT	Overall	FDTT	non-FDTT
Number of patients	538 (100%)	124 (23.0%)	108 (20.1%)	16 (3.0%)	360 (66.9%)	214 (39.8%)	146 (27.1%)	54 (10.0%)	29 (5.4%)	25 (4.6%)
Mean score of EQ-5D-5L	0.837	0.811	0.808	0.832	0.849	0.864	0.826	0.819	0.842	0.792
Mean score of EQ-VAS	67.9	64.5	64.4	65.2	69.1	70.0	67.8	66.9	66.1	67.9

Abbreviations: ACO, asthma and COPD overlap; COPD, chronic obstructive pulmonary disease; FDTT, fixed-dose combination triple therapy; HR QOL, health-related quality of life; non-FDTT, non-fixed dose combination regimen; TT, triple therapy

CONCLUSIONS

- While a positive impact of FDTT on HRQoL was observed for asthma and ACO patients, no such trend was observed for COPD patients.
- Although the number of patients for each population by administration modality was limited, administration modality may be an important consideration for treatment outcomes.

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