

# Adherence to single and multiple inhaled triple therapies in patients with COPD in Germany, considering different definitions

Gema Requena<sup>1</sup>, Kieran J. Rothnie<sup>1</sup>, Stephen G. Noorduy<sup>2,3</sup>, Jing Claussen<sup>4</sup>, Michael Schultze<sup>5</sup>, Nils Kossack<sup>6</sup>, Lena M. Richter<sup>6</sup>, Claus Vogelmeier<sup>7</sup>, Kai-Michael Beeh<sup>8</sup>, Raj Sharma<sup>9</sup>, Chris Compton<sup>9</sup>, Afisi S. Ismaila<sup>3,10</sup>

<sup>1</sup>Value Evidence and Outcomes, R&D Global Medical, GSK, Brentford, UK; <sup>2</sup>Value Evidence and Outcomes, R&D Global Medical, GSK, Mississauga, ON, Canada; <sup>3</sup>Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, ON, Canada; <sup>4</sup>Global Medical Affairs, GSK, Munich, Germany; <sup>5</sup>ZEG – Berlin Center for Epidemiology and Health Research GmbH, Berlin, Germany; <sup>6</sup>WIG2 GmbH (Wissenschaftliches Institut für Gesundheitsökonomie und Gesundheitssystemforschung) – Scientific Institute for Health Economics and Health System Research, Leipzig, Sachsen, Germany; <sup>7</sup>Department of Medicine, Pulmonary and Critical Care Medicine, University Medical Centre Giessen and Marburg, Philipps-University Marburg, German Center for Lung Research (DZL), Marburg, Germany; <sup>8</sup>Insaf Respiratory Research Institute, Wiesbaden, Germany; <sup>9</sup>Global Medical, GSK, Brentford, UK; <sup>10</sup>Value Evidence and Outcomes, R&D Global Medical, GSK, Collegeville, PA, USA



Digital poster



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## Introduction



Adherence to therapy is critical for achieving optimal clinical outcomes among patients with COPD<sup>1,2</sup>



Evidence shows that adherence to MITT is low in real-world settings;<sup>3,4</sup> SITT has the potential to improve adherence by reducing the number of inhalers required<sup>3,5</sup>



Adherence can be assessed via different measures, with factors such as stockpiling and periods of hospitalization potentially affecting the outcome<sup>6</sup>



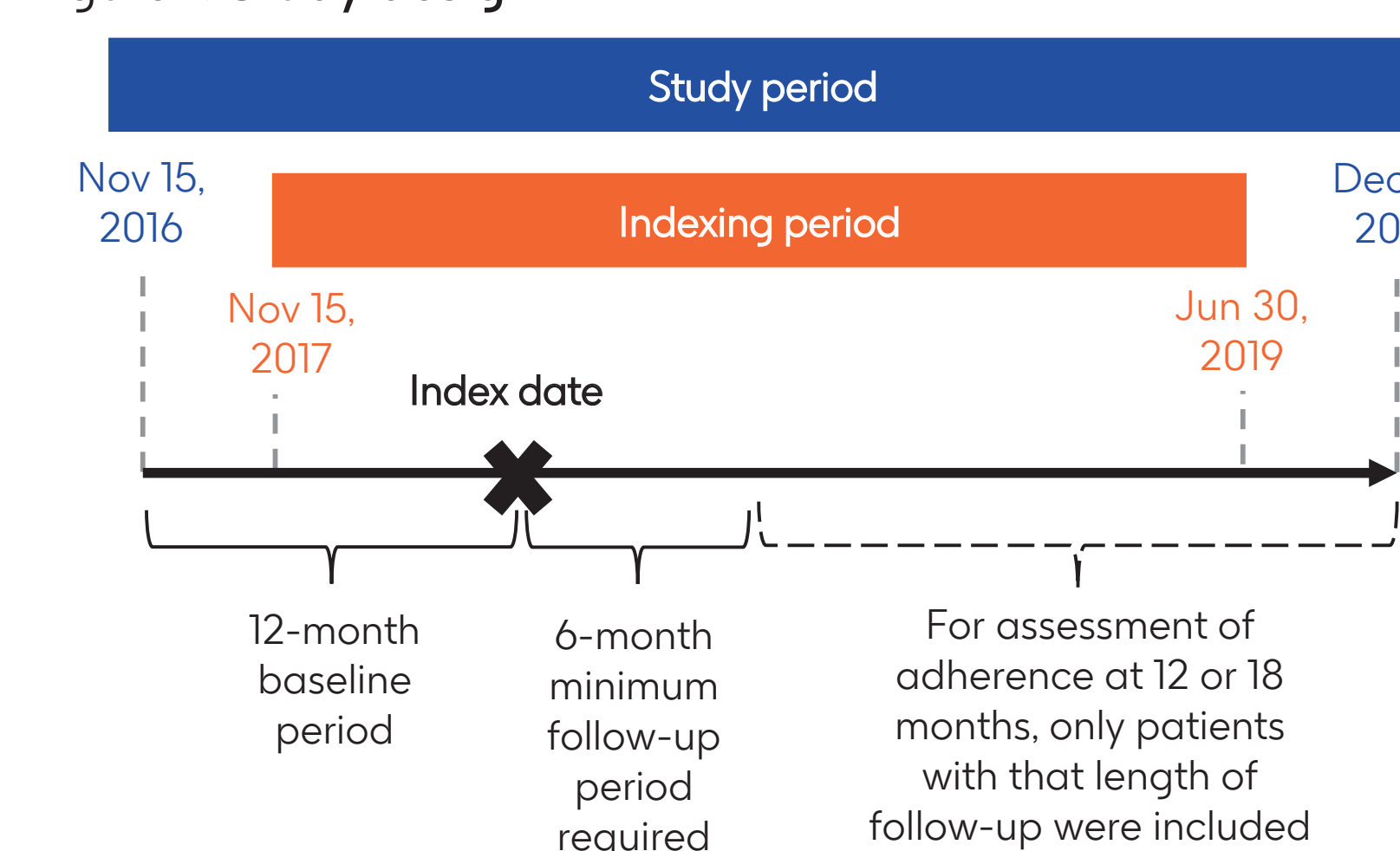
There is limited evidence on the impact of SITT on treatment adherence among patients with COPD in Germany

The objective of this study was to describe and compare medication adherence among patients with COPD in Germany, who initiated MITT or SITT

## Methods

- A retrospective cohort study of patients with COPD who initiated triple therapy (MITT or SITT [FF/UMEC/VI or FOR/BDP/GLY]), using the WIG2 benchmark database
- The index date was defined as the first/earliest date of triple therapy initiation in the indexing period (Figure 1)
- For MITT users, this was defined as the first date of overlapping supply of all three components of triple therapy (a minimum of 30 days overlap was required to define MITT use)

Figure 1: Study design



Inclusion criteria	Exclusion criteria
Aged ≥35 years at index	≥1 diagnostic code for any medical condition incompatible with a COPD diagnosis at any time in the patient's medical history that can interfere with the clinical diagnosis of COPD or substantially change the natural history of the disease
≥1 inpatient and/or ≥2 confirmed outpatient diagnoses of COPD at any time in the patient's medical history	
Outpatient prescription for triple therapy (MITT or SITT) during the inclusion period	
Continuously insured for a minimum of 2 years leading up to the index date	
No previous prescriptions for triple therapy	

- Adherence (as measured by PDC [number of days covered/number of days in the period]) was assessed at 6-, 12-, and 18-months post index, among patients with sufficient follow-up
- Different definitions of adherence were analyzed to assess the influence of different scenarios on PDC (Table 1). Patients were categorized as adherent (PDC ≥80%) or non-adherent (PDC <80%)
- IPTW using PS-based methodology was used to adjust for measured confounders between the cohorts. Covariates considered for inclusion in the PS model included demographics, clinical characteristics, comorbidities, and prior therapy. An SMD <0.1 was considered a negligible imbalance between the cohorts

Table 1: Different definitions of adherence considered

Definition	Explanation
Main approach (M)	All patients. No stockpiling or periods of hospitalization considered
1a	Patients with ≥1 follow-up prescription for the index triple therapy within 2 months of initiation
1b	Patients with periods of continuous therapy (e.g. no discontinuation* or treatment switches)
2	Patients with stockpiled therapy (i.e. treatment supply could be allocated to a later point in the observation period)
3	Patients with stockpiled therapy and periods of hospitalization were considered covered

\*Medication discontinuation was defined as a gap of >30 days between the end of a SITT prescription and the following refill, or a gap of >30 days between prescriptions in any of the three MITT components.

## Results

- In total, 5710 patients were included. Of these, 4079 (71%) initiated MITT and 1631 (29%) initiated SITT (FF/UMEC/VI, 12%; FOR/BDP/GLY, 17%)
- The mean age was 66 years across all cohorts (Table 2)

Table 2: Unadjusted baseline characteristics – overall population

Characteristic	MITT (n=4079)	SITT (n=1631)	FF/UMEC/VI (n=675)	FOR/BDP/GLY (n=956)
Mean age, years	66	66	66	66
Male, %	55.1	60.2	60.6	59.8
Smoker, %	42.9	45.6	46.5	44.9
FEV <sub>1</sub> <50%, %	7.6	7.2	6.1	8.0
Mean CCI score	2.3	2.2	2.2	2.2
Arthritis, %	38.0	37.7	36.3	38.7
Anxiety, %	31.3	30.4	27.7	32.3
Depression, %	28.7	25.2	23.3	26.6
Asthma, %	23.7	13.2	12.9	13.4
GERD, %	19.9	18.5	19.4	17.9

\*FEV<sub>1</sub> <50% was captured via ICD-10-GM diagnosis codes, not by clinical measures.

- Adherence was higher for SITT initiators versus MITT initiators at all time points and for all definitions of adherence examined (Figure 2)
- All analyses yielded consistent results; the highest proportion of adherent patients was observed for the adherence definition 1b (adherence only reported during periods of continuous therapy) at 6-months post index: 59% of patients on SITT; 64% of patients on FF/UMEC/VI; 57% of patients on FOR/BDP/GLY (Figures 2–4, respectively)
- Similar trends were observed at 12 and 18 months (Figures 2–4)

Figure 2: Proportion of patients adherent to therapy across different definitions of adherence (M, 1a, 1b, 2, and 3) at 6-, 12-, and 18-months post index, IPTW weighted: MITT\* vs SITT

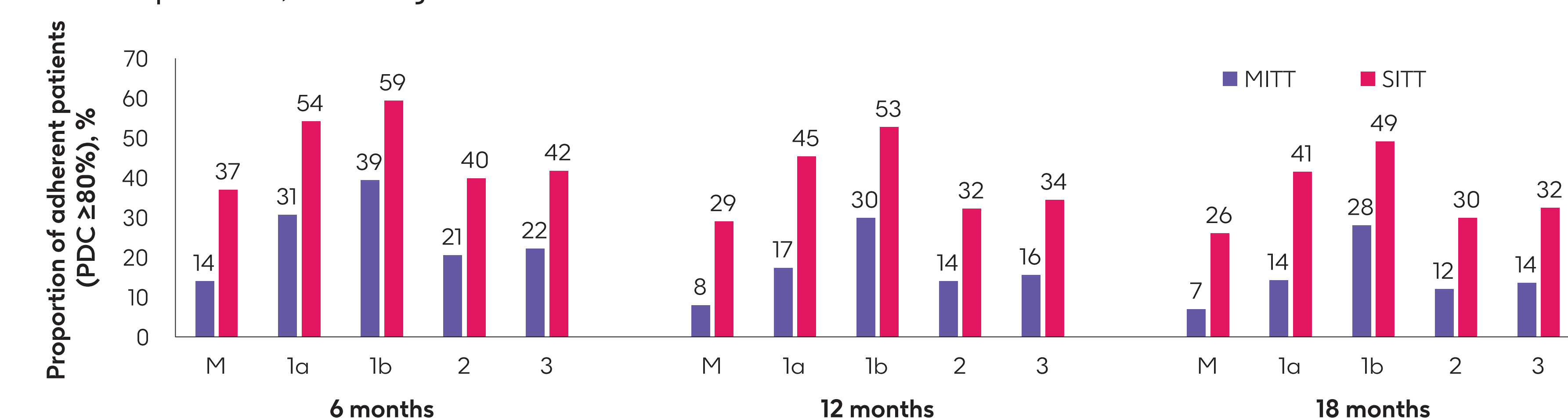


Figure 3: Proportion of patients adherent to therapy across different definitions of adherence (M, 1a, 1b, 2, and 3) at 6-, 12-, and 18-months post index, IPTW weighted: MITT\* vs FF/UMEC/VI

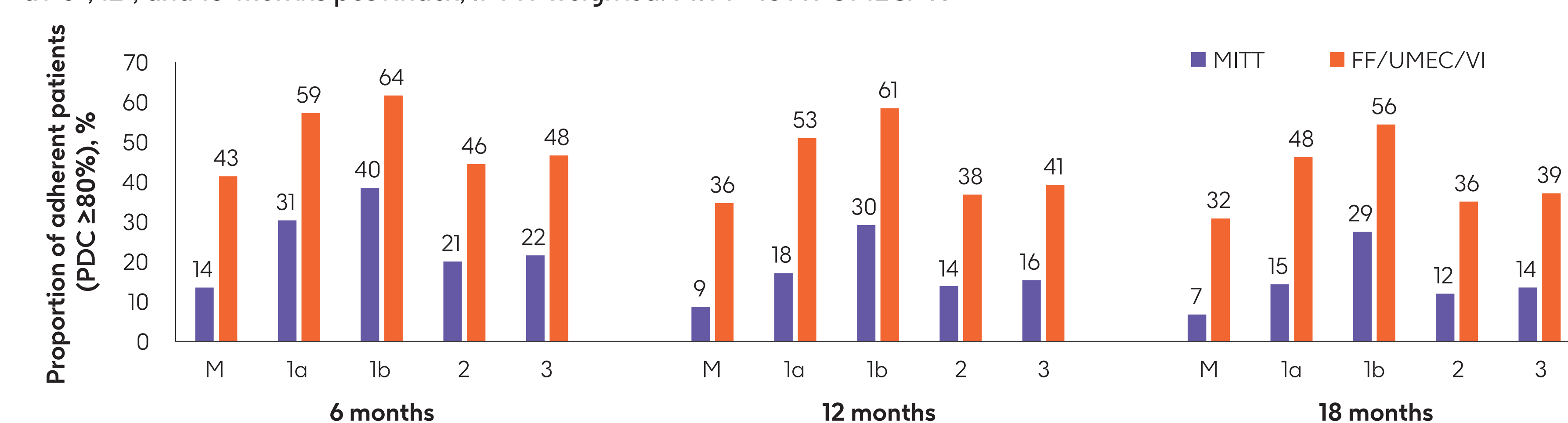
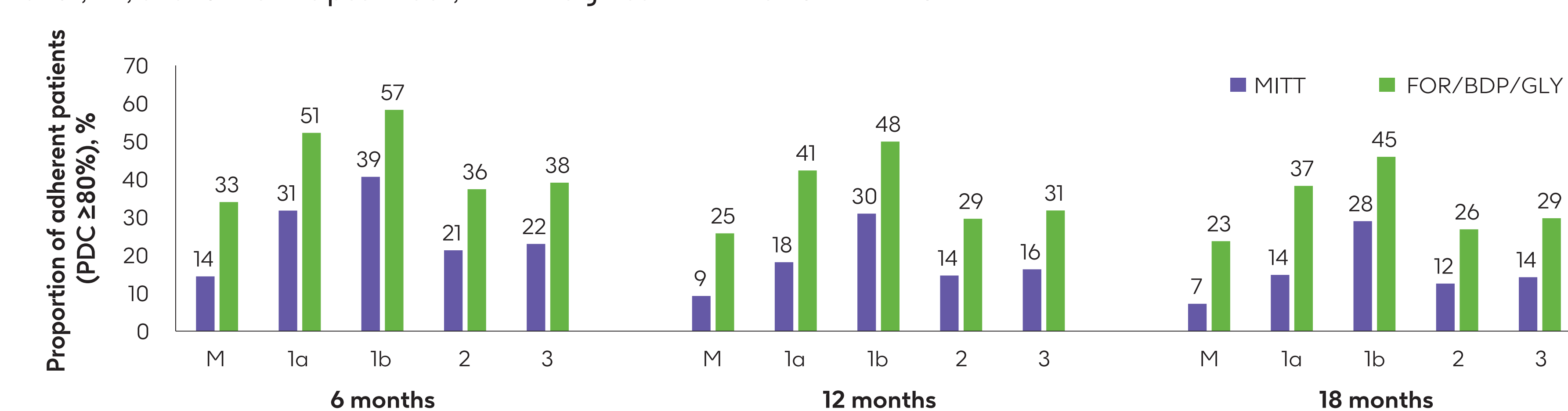


Figure 4: Proportion of patients adherent to therapy across different definitions of adherence (M, 1a, 1b, 2, and 3) at 6-, 12-, and 18-months post index, IPTW weighted: MITT\* vs FOR/BDP/GLY



\*Values for MITT may vary slightly between comparisons due to weighting.

## Limitations

- The definition of MITT may misclassify patients who are switching therapies as it is impossible to know with certainty whether all prescribed agents were taken simultaneously
- Pharmacy claims records do not contain number of intakes per day, so the usage was according to the approved product label
- Some of the therapies included in this analysis are also used in patients with asthma diagnoses. In cases where agents are prescribed to patients with COPD and asthma, it may be impossible to disentangle COPD treatment from systematic treatment of uncontrolled asthma

## Abbreviations

CCI, Charlson Comorbidity Index; COPD, chronic obstructive pulmonary disease; FEV<sub>1</sub>, forced expiratory volume in 1 second; FF/UMEC/VI, fluticasone furoate/umeclidinium/vilanterol; FOR/BDP/GLY, formoterol/beclomethasone/glycopyrronium; GERD, gastroesophageal reflux disease; GOLD, Global Initiative for Chronic Obstructive Lung Disease; ICD-10-GM, International Classification of Diseases, 10th Revision, German modification; IPTW, inverse probability of treatment weighting; MITT, multiple-inhaler triple therapy; PDC, proportion of days covered; PS, propensity score; SITT, single-inhaler triple therapy; SMD, standardized mean difference.

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