

**Table S1.** Changes in the asthma control, frequency of oral corticosteroid use as controllers and inhaled maintenance pharmacological therapies, monthly oral corticosteroid maintenance dose, and exacerbation frequency after Omalizumab treatment.

	Baseline	Follow-Up	Change from Baseline
<b>Continuation (n = 110)</b>			
<b>Number of exacerbation</b>			
Number of patients evaluated	110 (100%)	110 (100%)	110 (100%)
Mean ± SD	0.8 ± 1.5	0.5 ± 1.0	-0.3 ± 1.4
Median (Q1, Q3)	0.0 (0.0, 1.0)	0.0 (0.0, 1.0)	0.0 (0.0, 0.0)
Persistent presence	NA	NA	14 (12.7%)
Complete prevention	NA	NA	18 (16.4%)
Occurrence from nil	NA	NA	17 (15.5%)
Never present	NA	NA	61 (55.5%)
<b>Use of OCS as controller</b>	36 (32.7%)	22 (20.0%)	-14 (-12.7%)
<b>OCS maintenance dose (mg per month)<sup>†</sup></b>			
Number of patients evaluated	110 (100%)	110 (100%)	110 (100%)
Mean ± SD	85.9 ± 180.8	45.8 ± 106.6	-40.1 ± 178.3
Median (Q1, Q3)	0.0 (0.0, 140.0)	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)
<b>ACT</b>			
Number of patients evaluated	81 (73.6%)	76 (69.1%)	76 (69.1%)
Mean ± SD	15.9 ± 3.1	19.8 ± 4.4	3.8 ± 4.6
Median (Q1, Q3)	17.0 (14.0, 19.0)	21.0 (17.0, 23.8)	4.0 (1.0, 7.0)
≥3 (Responder)	NA	NA	47 (61.8%)
<3 (Non-responder)	NA	NA	29 (38.2%)
<b>Inhaled maintenance pharmacological therapy</b>			
Medium-dose ICS/LABA +/- Tiotropium	46 (41.8%)	52 (47.3%)	6 (4.8%)
High-dose ICS/LABA +/- Tiotropium	64 (58.2%)	58 (52.7%)	-6 (-4.8%)
<b>Boost (n = 14)</b>			
<b>Number of exacerbation</b>			
Number of patients evaluated	14 (100%)	14 (100%)	14 (100%)
Mean ± SD	0.7 ± 1.4	2.9 ± 3.6	2.1 ± 3.7
Median (Q1, Q3)	0.0 (0.0, 0.8)	2.0 (0.0, 4.0)	2.0 (0.0, 4.0)
Persistent presence	NA	NA	2 (14.3%)
Complete prevention	NA	NA	1 (7.1%)
Occurrence from nil	NA	NA	7 (50.0%)
Never present	NA	NA	4 (28.6%)
<b>Use of OCS as controller</b>	7 (50.0%)	3 (21.4%)	-4 (-28.6%)
<b>OCS maintenance dose (mg per month)<sup>†</sup></b>			
Number of patients evaluated	14 (100%)	14 (100%)	14 (100%)
Mean ± SD	171.4 ± 221.5	50.0 ± 104.3	-121.4 ± 219.6
Median (Q1, Q3)	70.0 (0.0, 280.0)	0.0 (0.0, 35.0)	-70.0 (-280.0, 0.0)
<b>ACT</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	9 (64.3%)
Mean ± SD	13.9 ± 3.9	19.7 ± 4.7	5.1 ± 5.4
Median (Q1, Q3)	15.0 (14.0, 16.8)	21.0 (15.0, 23.5)	7.0 (-1.0, 8.0)
≥3 (Responder)	NA	NA	6 (66.7%)
<3 (Non-responder)	NA	NA	3 (33.3%)
<b>Inhaled maintenance pharmacological therapy</b>			
Medium-dose ICS/LABA +/- Tiotropium	7 (50.0%)	8 (57.1%)	1 (0.8%)
High-dose ICS/LABA +/- Tiotropium	7 (50.0%)	6 (42.9%)	-1 (-0.8%)
<b>Total (n = 124)</b>			
<b>Number of exacerbation</b>			

Number of patients evaluated	124 (100%)	124 (100%)	124 (100%)
Mean $\pm$ SD	0.8 $\pm$ 1.5	0.8 $\pm$ 1.7	0.0 $\pm$ 1.9
Median (Q1, Q3)	0.0 (0.0, 1.0)	0.0 (0.0, 1.0)	0.0 (0.0, 0.0)
Persistent presence	NA	NA	16 (12.9%)
Complete prevention	NA	NA	19 (15.3%)
Occurrence from nil	NA	NA	24 (19.4%)
Never present	NA	NA	65 (52.4%)
<b>Use of OCS as controller</b>	43 (34.7%)	25 (20.2%)	-18 (-14.5%)
<b>OCS maintenance dose (mg per month)<sup>†</sup></b>			
Number of patients evaluated	124 (100%)	124 (100%)	124 (100%)
Mean $\pm$ SD	95.6 $\pm$ 186.8	46.3 $\pm$ 105.9	-49.3 $\pm$ 184.2
Median (Q1, Q3)	0.0 (0.0, 140.0)	0.0 (0.0, 0.0)	0.0 (-96.3, 0.0)
<b>ACT</b>			
Number of patients evaluated	93 (75.0%)	85 (68.5%)	85 (68.5%)
Mean $\pm$ SD	15.6 $\pm$ 3.3	18.8 $\pm$ 4.4	4.0 $\pm$ 4.7
Median (Q1, Q3)	16.0 (14.0, 18.0)	21.0 (17.0, 23.5)	4.0 (0.5, 7.0)
$\geq 3$ (Responder)	NA	NA	53 (62.4%)
$< 3$ (Non-responder)	NA	NA	32 (37.6%)
<b>Inhaled maintenance pharmacological therapy</b>			
Medium-dose ICS/LABA +/- Tiotropium	53 (42.7%)	60 (48.4%)	7 (5.6%)
High-dose ICS/LABA +/- Tiotropium	71 (57.3%)	64 (51.6%)	-7 (-5.6%)

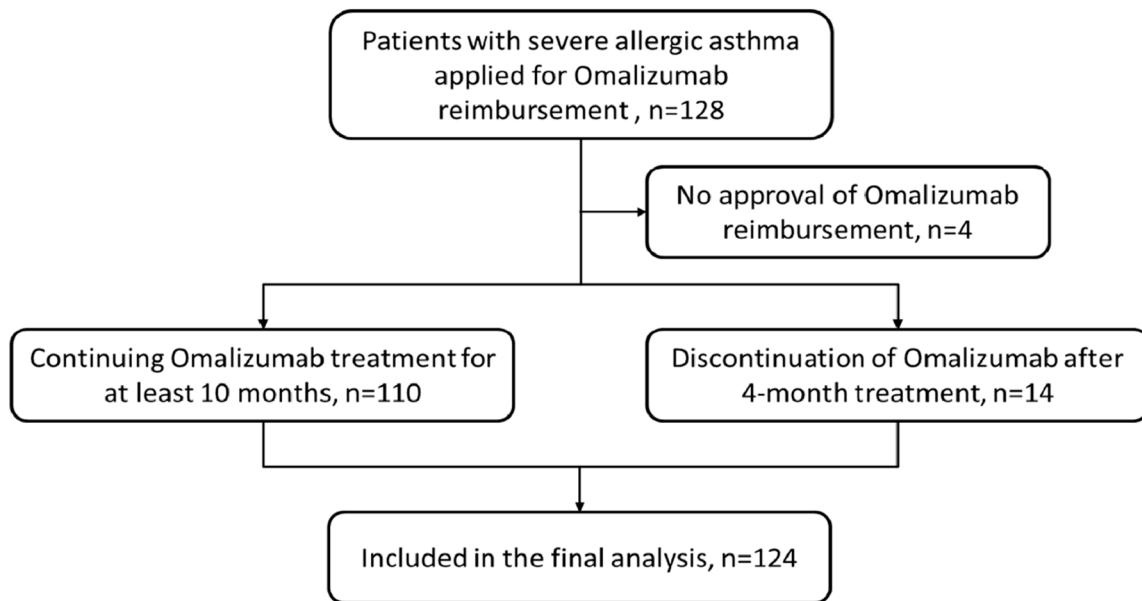
<sup>†</sup>The steroid dose was converted to equivalent dose of prednisone. Abbreviations: ACT, asthma control test; ICS, inhaled corticosteroid; LABA, long-acting beta-agonist; NA, not applicable; OCS, oral corticosteroid; Q, quartile; SD, standard deviation.

**Table S2.** Changes in the lung function after Omalizumab treatment.

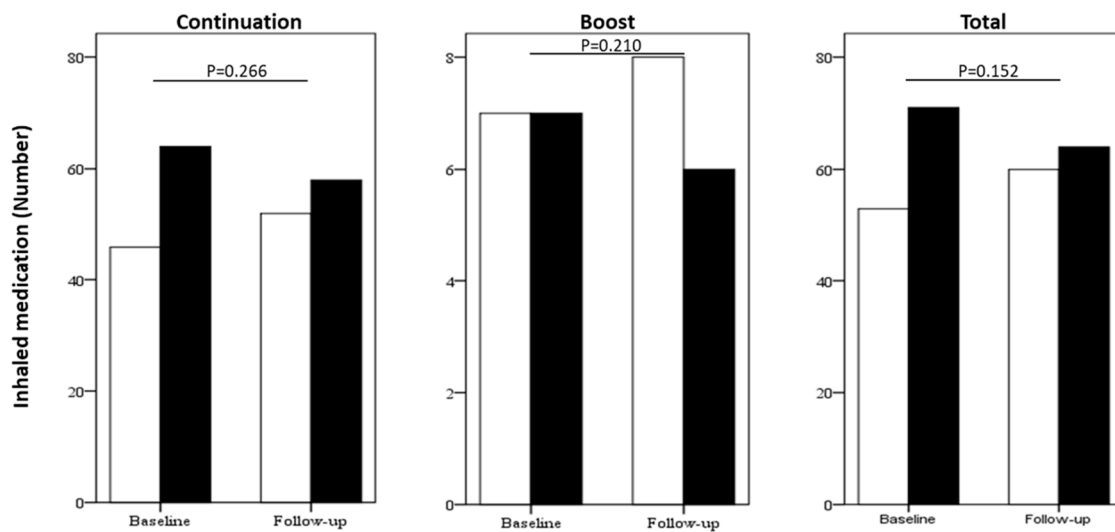
	Baseline	Follow-Up	Change from Baseline
<b>Continuation (n = 110)</b>			
<b>Pre-BT FEV1/FVC (%)</b>			
Number of patients evaluated	85 (77.3%)	84 (76.4%)	68 (61.8%)
Mean $\pm$ SD	64.1 $\pm$ 14.2	63.8 $\pm$ 13.9	-1.0 $\pm$ 7.8
Median (Q1, Q3)	64.0 (55.0, 73.0)	64.0 (53.0, 72.0)	-0.5 (-5.0, 4.8)
<b>Pre-BT FEV1 (L)</b>			
Number of patients evaluated	85 (77.3%)	84 (76.4%)	68 (61.8%)
Mean $\pm$ SD	1.8 $\pm$ 0.8	1.9 $\pm$ 0.8	0.0 $\pm$ 0.3
Median (Q1, Q3)	1.7 (1.1, 2.3)	1.7 (1.2, 2.4)	0.0 (-0.2, 0.2)
<b>Pre-BT FEV1 % predicted</b>			
Number of patients evaluated	85 (77.3%)	84 (76.4%)	68 (61.8%)
Mean $\pm$ SD	65.8 $\pm$ 21.7	69.4 $\pm$ 21.9	1.3 $\pm$ 11.3
Median (Q1, Q3)	64.0 (47.5, 80.5)	71.5 (52.3, 83.8)	0.0 (-7.8, 9.0)
<b>Pre-BT FVC (L)</b>			
Number of patients evaluated	85 (77.3%)	84 (76.4%)	68 (61.8%)
Mean $\pm$ SD	2.7 $\pm$ 0.9	2.9 $\pm$ 1.0	0.1 $\pm$ 0.4
Median (Q1, Q3)	2.7 (2.0, 3.3)	2.8 (2.2, 3.5)	0.0 (-0.2, 0.3)
<b>Pre-BT FVC % predicted</b>			
Number of patients evaluated	85 (77.3%)	84 (76.4%)	68 (61.8%)
Mean $\pm$ SD	84.2 $\pm$ 20.9	88.1 $\pm$ 19.4	2.4 $\pm$ 12.5
Median (Q1, Q3)	84.0 (68.5, 97.5)	89.0 (76.8, 100.0)	1.5 (-5.8, 9.5)
<b>Pre-BT FEF<sub>25-75</sub> (%)</b>			
Number of patients evaluated	85 (77.3%)	84 (76.4%)	68 (61.8%)
Mean $\pm$ SD	54.2 $\pm$ 11.6	58.9 $\pm$ 9.1	4.3 $\pm$ 5.3
Median (Q1, Q3)	56.0 (45.5, 66.0)	60.0 (54.0, 66.0)	4.0 (0.0, 6.8)

<b>Boost (n = 14)</b>			
<b>Pre-BT FEV1/FVC (%)</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	7 (50.0%)
Mean ± SD	63.1 ± 14.2	61.3 ± 10.9	-1.4 ± 11.0
Median (Q1, Q3)	68.5 (46.8, 75.0)	57.0 (54.0, 69.5)	-2.0 (-13.0, 8.0)
<b>Pre-BT FEV1 (L)</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	7 (50.0%)
Mean ± SD	1.6 ± 0.7	1.7 ± 0.5	0.1 ± 0.4
Median (Q1, Q3)	1.6 (1.1, 2.1)	1.6 (1.2, 2.0)	-0.1 (-0.2, 0.6)
<b>Pre-BT FEV1 % predicted</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	7 (50.0%)
Mean ± SD	67.3 ± 27.8	72.8 ± 25.7	2.1 ± 18.3
Median (Q1, Q3)	67.5 (44.8, 74.0)	64.0 (55.5, 91.5)	-6.0 (-7.0, 23.0)
<b>Pre-BT FVC (L)</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	7 (50.0%)
Mean ± SD	2.5 ± 0.8	2.7 ± 0.9	0.3 ± 0.5
Median (Q1, Q3)	2.6 (1.7, 3.1)	2.7 (2.0, 3.5)	0.2 (-0.3, 0.8)
<b>Pre-BT FVC % predicted</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	7 (50.0%)
Mean ± SD	86.0 ± 33.8	96.6 ± 39.1	7.0 ± 17.4
Median (Q1, Q3)	75.5 (68.8, 84.0)	85.0 (69.0, 110.5)	8.0 (-7.0, 22.0)
<b>Pre-BT FEF<sub>25-75</sub> (%)</b>			
Number of patients evaluated	12 (85.7%)	9 (64.3%)	7 (50.0%)
Mean ± SD	57.3 ± 12.2	53.3 ± 13.8	-3.1 ± 1.7
Median (Q1, Q3)	63.5 (43.8, 67.8)	58.0 (39.0, 64.0)	-4.0 (-4.0, -2.0)
<b>Total (n = 124)</b>			
<b>Pre-BT FEV1/FVC (%)</b>			
Number of patients evaluated	97 (78.2%)	93 (75.0%)	75 (60.5%)
Mean ± SD	64.0 ± 14.2	63.6 ± 13.5	-1.0 ± 8.0
Median (Q1, Q3)	65.0 (55.0, 74.5)	63.0 (53.0, 72.0)	-1.0 (-5.0, 5.0)
<b>Pre-BT FEV1 (L)</b>			
Number of patients evaluated	97 (78.2%)	93 (75.0%)	75 (60.5%)
Mean ± SD	1.7 ± 0.7	1.8 ± 0.8	0.0 ± 0.3
Median (Q1, Q3)	1.7 (1.1, 2.3)	1.7 (1.3, 2.4)	0.0 (-0.2, 0.2)
<b>Pre-BT FEV1 % predicted</b>			
Number of patients evaluated	97 (78.2%)	93 (75.0%)	75 (60.5%)
Mean ± SD	66.0 ± 22.4	69.7 ± 21.8	1.4 ± 11.9
Median (Q1, Q3)	66.0 (47.5, 79.5)	69.0 (52.5, 83.5)	0.0 (-7.0, 9.0)
<b>Pre-BT FVC (L)</b>			
Number of patients evaluated	97 (78.2%)	93 (75.0%)	75 (60.5%)
Mean ± SD	2.7 ± 0.9	2.8 ± 0.9	0.1 ± 0.4
Median (Q1, Q3)	2.7 (1.9, 3.3)	2.8 (2.2, 3.5)	0.1 (-0.2, 0.3)
<b>Pre-BT FVC % predicted</b>			
Number of patients evaluated	97 (78.2%)	93 (75.0%)	75 (60.5%)
Mean ± SD	84.5 ± 23.2	88.9 ± 22.2	2.8 ± 12.9
Median (Q1, Q3)	83.0 (68.5, 97.0)	89.0 (76.0, 100.5)	2.0 (-6.0, 12.0)
<b>Pre-BT FEF<sub>25-75</sub>%</b>			
Number of patients evaluated	97 (78.2%)	93 (75.0%)	75 (60.5%)
Mean ± SD	54.6 ± 11.7	58.4 ± 9.7	3.6 ± 5.5
Median (Q1, Q3)	57.0 (45.5, 66.0)	60.0 (54.0, 66.0)	4.0 (-1.0, 6.0)

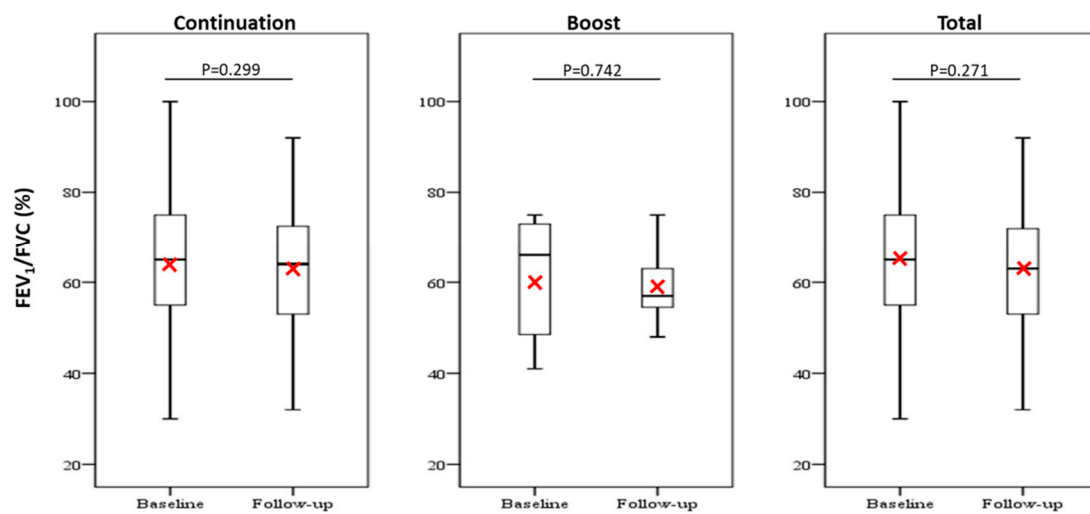
Abbreviations: BT, bronchodilator test; FEF<sub>25-75</sub>%, forced expiratory flow at 25–75%; FEV1, forced expiratory volume in one second; FVC, forced vital capacity; also see Supplementary Table S1.



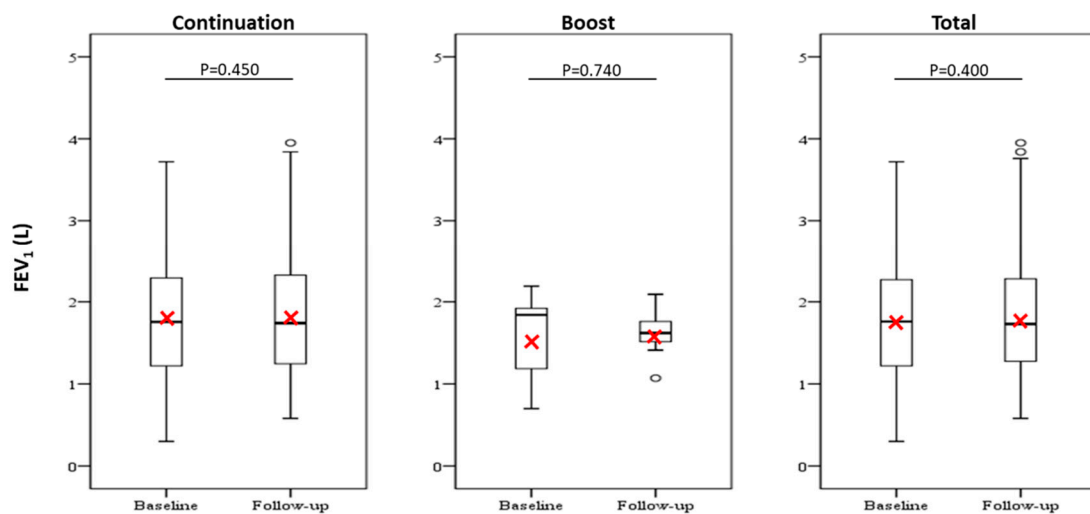
**Figure S1.** The patient enrollment flow chart.



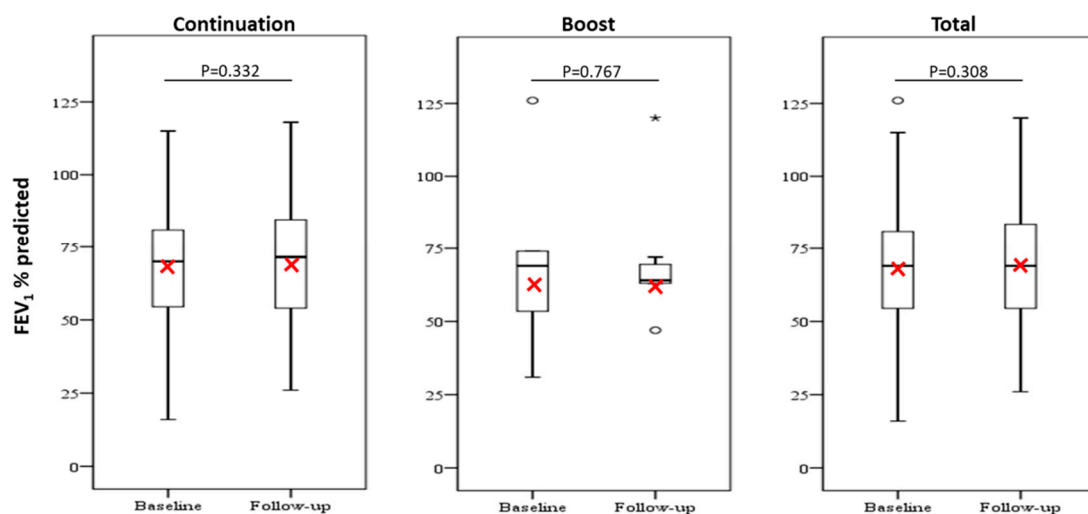
**Figure S2.** The comparison of inhaled maintenance pharmacological therapies between baseline and one-year follow-up. White and black bars represented medium-dose ICS/LABA +/- Tiotropium and high-dose ICS/LABA +/- Tiotropium, respectively. The difference was compared using Chi-square test at a significant difference of P-value < 0.05. Abbreviations: ICS, inhaled corticosteroid; LABA, long-acting beta-agonist.



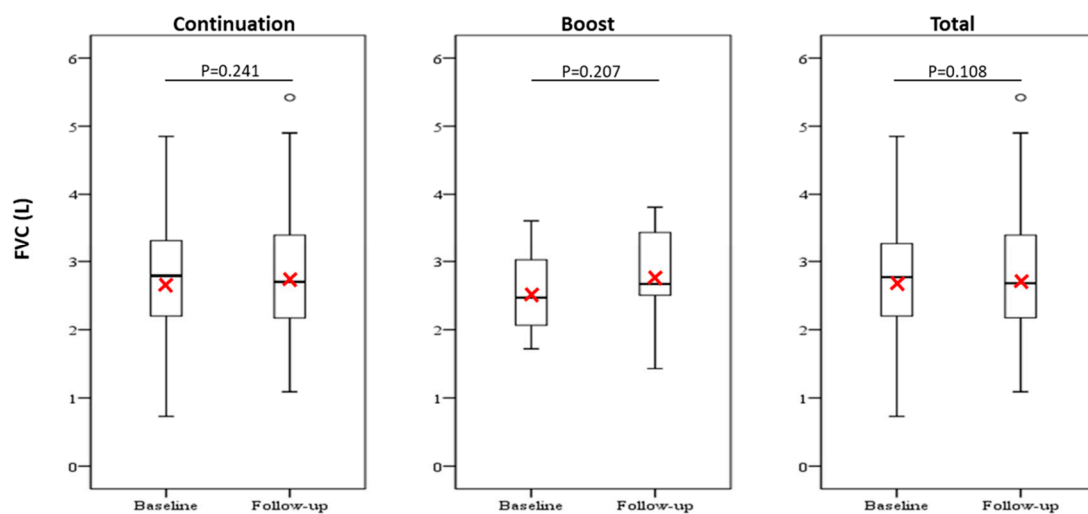
**Figure S3.** The FEV<sub>1</sub>/FVC at baseline and at 12-month follow-up. Red cross represented the mean value. The difference was compared using the cohort whose data were available both at baseline and at 12-month follow-up by paired sample *t*-test or Wilcoxon signed-rank test at a significant difference of *P*-value < 0.05. Abbreviations: FEV<sub>1</sub>, forced expiratory volume in one second; FVC, forced vital capacity.



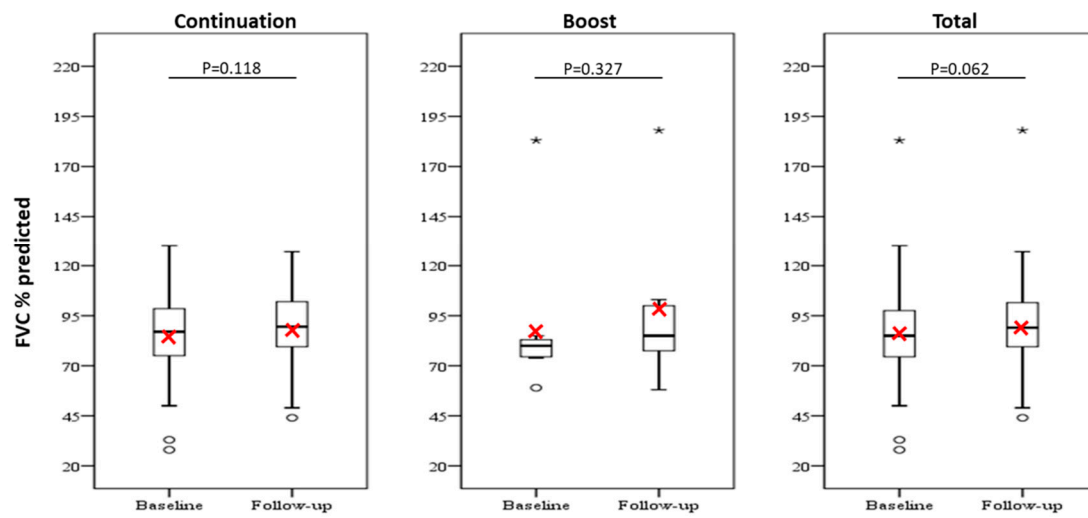
**Figure S4.** The comparison of FEV<sub>1</sub> between baseline and 12-month follow-up. Red cross represented the mean value. The difference was compared using the cohort whose data were available both at baseline and at 12-month follow-up by paired sample *t*-test or Wilcoxon signed-rank test at a significant difference of *P*-value < 0.05. Abbreviations: FEV<sub>1</sub>, forced expiratory volume in one second.



**Figure S5.** The FEV1 % predicted at baseline and at one-year follow-up. Red cross represented the mean value. The difference was compared using the cohort whose data were available both at baseline and at 12-month follow-up by paired sample *t*-test or Wilcoxon signed-rank test at a significant difference of *P*-value < 0.05. Abbreviations: FEV1, forced expiratory volume in one second.



**Figure S6.** The comparison of FVC between baseline and 12-month follow-up. Red cross represented the mean value. The difference was compared using the cohort whose data were available both at baseline and at 12-month follow-up by paired sample *t*-test or Wilcoxon signed-rank test at a significant difference of *P*-value < 0.05. Abbreviations: FVC, forced vital capacity.



**Figure S7.** The comparison of FVC % predicted between baseline and one-year follow-up. Red cross represented the mean value. The difference was compared using the cohort whose data were available both at baseline and at 12-month follow-up by paired sample *t*-test or Wilcoxon signed-rank test at a significant difference of *P*-value < 0.05. Abbreviations: FVC, forced vital capacity.