

Supplemental Table 1. Characteristics between the patients categorized by week-1 level of absolute lymphocyte count in the primary cohort and propensity score-matched cohort

	Before PSM			1:1 PSM		
	ALC \geq 1500 n=3,523	ALC< 1500 n=2,199	p value	ALC \geq 1500 n=1,958	ALC< 1500 n=1,958	p value
Basic characteristics						
Age, years	67 [55–78]	70 [59–81]	<0.01	70 [59–81]	70 [59–81]	0.81
Sex (male)	2217 (62.9%)	1416 (64.4%)	<0.01	1441 (64.7%)	1416 (64.4%)	0.81
Body mass index	23.7 [20.8–	22.5 [19.9–25.4]	<0.01	23.0 [19.9–25.5]	22.0 [19.9–25.4]	0.36
CCI \geq 2	2208 (62.7%)	1552 (70.6%)	<0.01	1587 (71.3%)	1552 (70.6%)	0.60
Severity and managements						
APACHE II	24 [18–29]	26 [20–31]	<0.01	26 [20–31]	26 [20–31]	0.31
Presence of septic shock	539 (15.3%)	447 (20.3%)	<0.01	477 (21.4%)	447 (20.3%)	0.40
Receiving mechanical ventilation	2557 (72.6%)	1677 (76.3%)	<0.01	1710 (76.8%)	1677 (76.3%)	0.66
Fluid balance day 1-3, positive	2189 (62.1%)	1495 (68.0%)	<0.01	1540 (69.2%)	1495 (68.0%)	0.38
Blood transfusion in ICU	1615 (45.8%)	1329 (60.4%)	<0.01	1385 (62.2%)	1329 (60.4%)	0.21
Main organ dysfunction/failure						
Acute respiratory failure	1057 (30.0%)	542 (24.6%)	<0.01	536 (24.1%)	542 (24.6%)	0.63
Acute neurological disorders	415 (11.8%)	129 (5.9%)	<0.01	128 (5.7%)	129 (5.9%)	0.83
Acute cardiac disorders	324 (9.2%)	176 (8.0%)	0.13	172 (7.7%)	176 (8.0%)	0.73
Acute renal disorders	148 (4.2%)	71 (3.2%)	0.07	71 (3.2%)	71 (3.2%)	0.91
Laboratory data						
White blood cell count ($10^3/\mu\text{L}$)	13.9 [10.7–16.8]	12.5 [9.3–15.8]	<0.01	12.0 [9.5–15.6]	13.0 [9.3–15.8]	0.74
Albumin(g/dl)	3.2 [2.7–3.7]	3.0 [2.6–3.4]	<0.01	3.0 [2.5–3.4]	3.0 [2.6–3.4]	0.33
Platelet ($10^3/\mu\text{L}$)	252 [206–307]	242 [197–297]	<0.01	241 [197–296]	242 [197–297]	0.93
Haemoglobin (g/dL)	12.8 [11.3–14.4]	12.3 [11.0–13.7]	<0.01	12.0 [11.0–13.7]	12.0 [11.0–13.7]	0.41
Lactate (mg/dL)	15.1 [11.4–19.4]	15.3 [11.3–19.7]	0.59	15.0 [11.5–19.4]	15.0 [11.3–19.7]	0.91
Creatinine (mg/dL)	1.1 [0.8–1.4]	1.1 [0.8–1.4]	0.37	1.0 [0.8–1.4]	1.0 [0.8–1.4]	0.62

Abbreviations: PSM, propensity score matching; CCI, Charlson Comorbidity Index; APACHE, acute physiology and chronic health evaluation.

Supplemental Table 2. Characteristics between the patients categorized by week-1 level of absolute lymphocyte count in the primary cohort and IPTW cohort

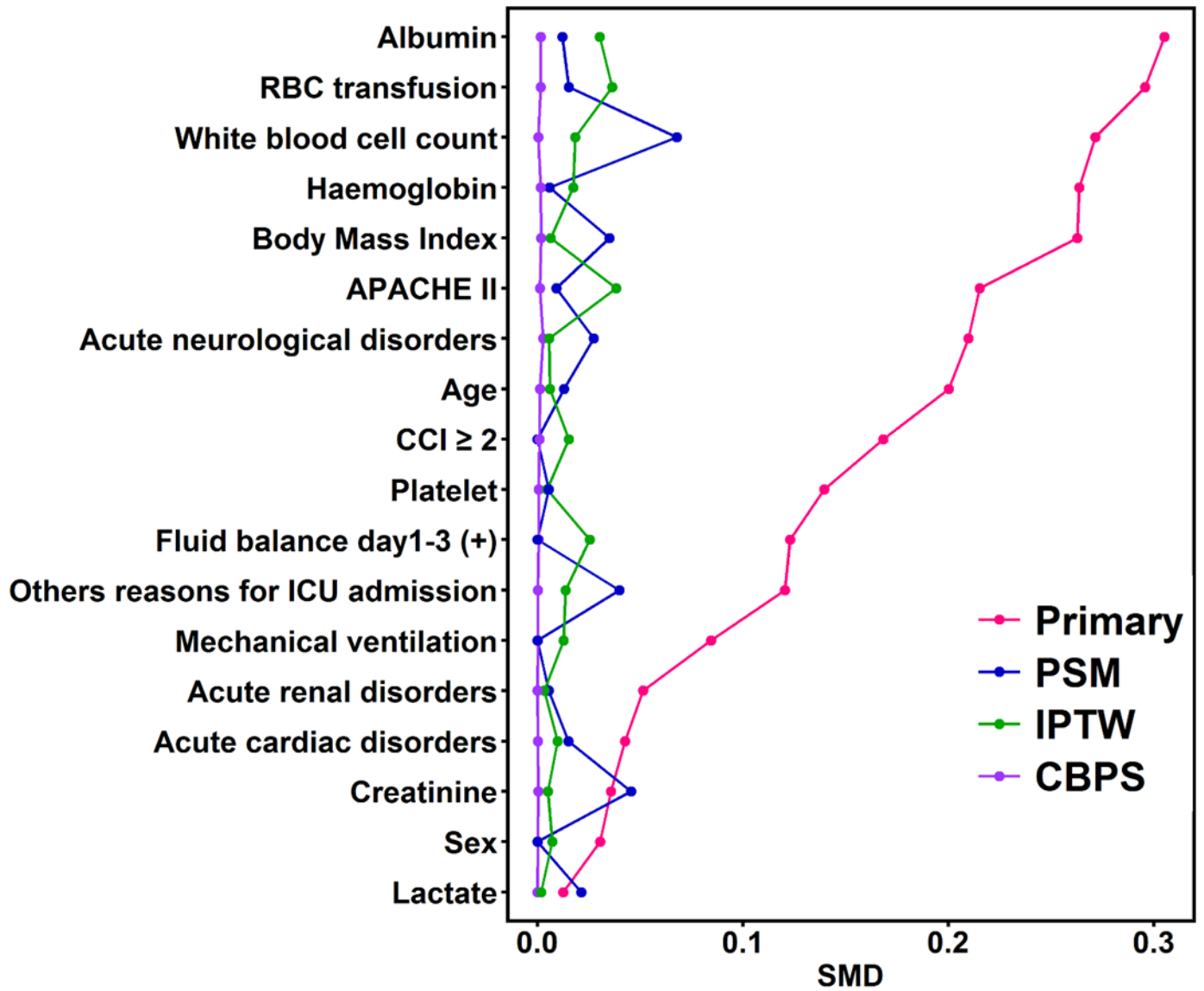
	Before IPTW			After IPTW		
	ALC \geq 1500	ALC< 1500	p value	ALC \geq 1500	ALC< 1500	p value
Basic characteristics						
Age, years	68 [56–79]	70 [59–81]	<0.01	70 [58–81]	70 [59–81]	0.92
Sex (male)	3033 (63.2%)	600 (64.8%)	0.39	605 (64.8%)	600 (64.8%)	0.99
Body mass index	23.4 [20.6–	22.1 [19.8–25.1]	<0.01	22.0 [19.6–25.3]	22.0 [19.8–25.1]	0.65
CCI \geq 2	3108 (64.8%)	652 (70.4%)	<0.01	664 (71.1%)	652 (70.4%)	0.70
Severity and managements						
APACHE II	24 [19–30]	27 [21–31]	<0.01	26 [21–31]	27 [21–31]	1.00
Presence of septic shock	774 (16.1%)	212 (22.9%)	<0.01	217 (23.2%)	212 (22.9%)	0.85
Receiving mechanical ventilation	3500 (73.0%)	734 (79.3%)	<0.01	745 (79.8%)	734 (79.3%)	0.70
Fluid balance day 1-3, positive	3012 (62.8%)	672 (72.6%)	<0.01	680 (72.8%)	672 (72.6%)	0.89
Blood transfusion in ICU	2347 (48.9%)	597 (64.5%)	<0.01	609 (65.2%)	597 (64.5%)	0.68
Main organ dysfunction/failure						
Acute respiratory failure	1382 (28.8%)	217 (23.4%)	<0.01	215 (23.1%)	217 (23.4%)	0.82
Acute neurological disorders	514 (10.7%)	30 (3.2%)	<0.01	30 (3.2%)	30 (3.2%)	0.91
Acute cardiac disorders	436 (9.1%)	64 (6.9%)	0.04	64 (6.8%)	64 (6.9%)	0.93
Acute renal disorders	190 (4.0%)	29 (3.1%)	0.27	29 (3.1%)	29 (3.1%)	0.92
Laboratory data						
White blood cell count ($10^3/\mu\text{L}$)	13.6 [10.5–16.7]	12.0 [8.7–15.2]	<0.01	12.0 [8.9–15.1]	12.0 [8.7–15.2]	0.73
Albumin(g/dl)	3.1 [2.7–3.6]	2.9 [2.5–3.4]	<0.01	3.0 [2.5–3.4]	3.0 [2.5–3.4]	0.51
Platelet ($10^3/\mu\text{L}$)	251 [205–305]	238 [193–293]	<0.01	235 [194–290]	238 [193–293]	0.85
Haemoglobin (g/dL)	12.7 [11.3–14.2]	12.3 [11.0–13.6]	<0.01	12.0 [10.9–13.6]	12.0 [11.0–13.6]	0.76
Lactate (mg/dL)	15.1 [11.3–19.4]	15.6 [11.5–20.1]	0.04	16.0 [11.7–19.7]	16.0 [11.5–20.1]	0.87
Creatinine (mg/dL)	1.1 [0.8–1.4]	1.1 [0.8–1.4]	0.80	1.0 [0.8–1.4]	1.0 [0.8–1.4]	0.92

Abbreviations: IPTW, inverse probability of treatment weighting; CCI, Charlson Comorbidity Index; APACHE, acute physiology and chronic health evaluation.

Supplemental Table 3. Characteristics between the patients categorized by week-1 level of absolute lymphocyte count in the primary cohort and propensity score-matched cohort

	Before PSM		p value	1:1 PSM		p value
	ALC \geq 1000 n=4,796	ALC< 1000 n=926		ALC \geq 1000 n=926	ALC< 1000 n=926	
Basic characteristics						
Age, years	68 [56–79]	70 [59–81]	<0.01	70 [58–81]	70 [59–81]	0.92
Sex (male)	3033 (63.2%)	600 (64.8%)	0.39	605 (64.8%)	600 (64.8%)	0.99
Body mass index	23.4 [20.6–	22.1 [19.8–25.1]	<0.01	22.0 [19.6–25.3]	22.0 [19.8–25.1]	0.65
CCI \geq 2	3108 (64.8%)	652 (70.4%)	<0.01	664 (71.1%)	652 (70.4%)	0.70
Severity and managements						
APACHE II	24 [19–30]	27 [21–31]	<0.01	26 [21–31]	27 [21–31]	1.00
Presence of septic shock	774 (16.1%)	212 (22.9%)	<0.01	217 (23.2%)	212 (22.9%)	0.85
Receiving mechanical ventilation	3500 (73.0%)	734 (79.3%)	<0.01	745 (79.8%)	734 (79.3%)	0.70
Fluid balance day 1-3, positive	3012 (62.8%)	672 (72.6%)	<0.01	680 (72.8%)	672 (72.6%)	0.89
Blood transfusion in ICU	2347 (48.9%)	597 (64.5%)	<0.01	609 (65.2%)	597 (64.5%)	0.68
Main organ dysfunction/failure						
Acute respiratory failure	1382 (28.8%)	217 (23.4%)	<0.01	215 (23.1%)	217 (23.4%)	0.82
Acute neurological disorders	514 (10.7%)	30 (3.2%)	<0.01	30 (3.2%)	30 (3.2%)	0.91
Acute cardiac disorders	436 (9.1%)	64 (6.9%)	0.04	64 (6.8%)	64 (6.9%)	0.93
Acute renal disorders	190 (4.0%)	29 (3.1%)	0.27	29 (3.1%)	29 (3.1%)	0.92
Laboratory data						
White blood cell count ($10^3/\mu\text{L}$)	13.6 [10.5–16.7]	12.0 [8.7–15.2]	<0.01	12.0 [8.9–15.1]	12.0 [8.7–15.2]	0.73
Albumin(g/dl)	3.1 [2.7–3.6]	2.9 [2.5–3.4]	<0.01	3.0 [2.5–3.4]	3.0 [2.5–3.4]	0.51
Platelet ($10^3/\mu\text{L}$)	251 [205–305]	238 [193–293]	<0.01	235 [194–290]	238 [193–293]	0.85
Haemoglobin (g/dL)	12.7 [11.3–14.2]	12.3 [11.0–13.6]	<0.01	12.0 [10.9–13.6]	12.0 [11.0–13.6]	0.76
Lactate (mg/dL)	15.1 [11.3–19.4]	15.6 [11.5–20.1]	0.04	16.0 [11.7–19.7]	16.0 [11.5–20.1]	0.87
Creatinine (mg/dL)	1.1 [0.8–1.4]	1.1 [0.8–1.4]	0.80	1.0 [0.8–1.4]	1.0 [0.8–1.4]	0.92

Abbreviations: PSM, propensity score matching; CCI, Charlson Comorbidity Index; APACHE, acute physiology and chronic health evaluation.



Supplemental Figure 1. The standardized mean difference between the patients whose absolute lymphocyte counts were higher and lower than 1500 per μL in each cohort. Variables were ranked by the SMD. Abbreviations: SMD, standard mean difference; PSM, propensity score matching; IPTW, inverse probability of treatment weighting; CBPS, covariate balancing propensity score; APACHE, acute physiology and chronic health evaluation; BUN, blood urea nitrogen; BMI, body mass index; COPD, chronic obstructive pulmonary disease.