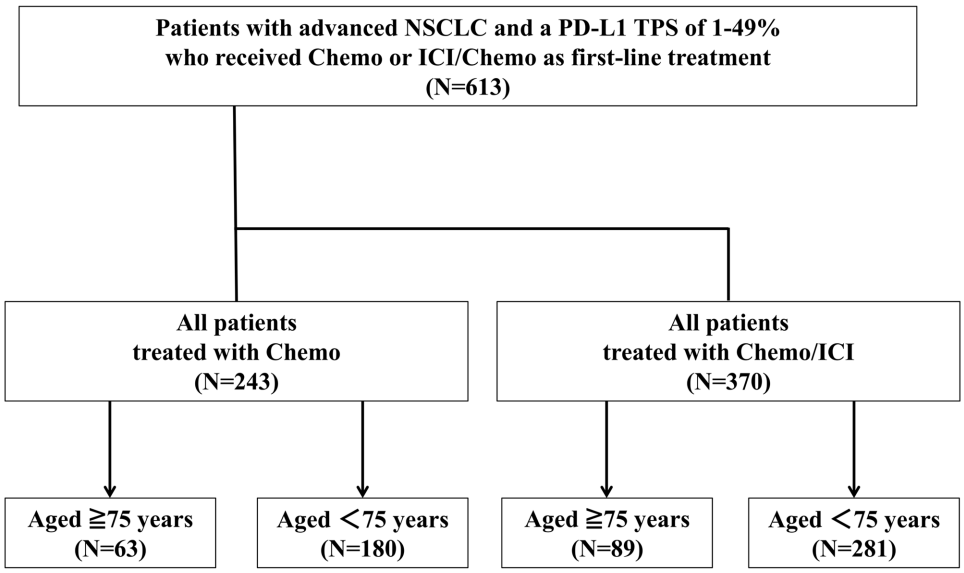
Supplementary



NSCLC, non-small cell lung cancer; PD-L1, programmed death-ligand 1; TPS, tumor proportion score; Chemo/ICI, platinum-based chemotherapy with immune checkpoint inhibitor; Chemo, platinum-based chemotherapy

Figure 1 Flow chart for the study patients.

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Table S1 Patient characteristics in all patients after PSM (N=452)

Patient characteristics	Chemotherapy group (N=226)	ICI plus chemotherapy group (N=226)	P value
Age (years)			
Median (IQR)	70 (64-75)	70 (64-75)	
Age categorization, N (%)			
<75 years	166 (73)	163 (72)	0.75
≥75 years	60 (27)	63 (28)	
Sex, N (%)			
Male	183 (81)	189 (84)	0.46
Female	43 (19)	37 (16)	
Smoking status, N (%)			
Never-smoker	22 (10)	19 (8)	0.62
Current or former smoker	204 (90)	207 (92)	
ECOG PS, N (%)			
0	74 (33)	75 (33)	0.92
1	152 (67)	151 (67)	
Histology, N (%)			
Squamous cell carcinoma	86 (38)	92 (34)	0.56
Adenocarcinoma	118 (52)	116 (51)	
Other	22 (10)	18 (8)	
Stage, N (%)			
III	22 (10)	17 (8)	0.66
IV	157 (69)	164 (73)	
Recurrence	47 (21)	45 (20)	
Liver metastasis, N (%)	28 (12)	18 (8)	0.12
Brain metastasis, N (%)	35 (15)	28 (12)	0.34
Treatment regimen, N (%)			
Chemotherapy	226 (100)		
Chemotherapy plus pembrolizumab		169 (75)	
Chemotherapy plus atezolizumab		25 (11)	
Chemotherapy plus ipilimumab and nivolumab		32 (14)	
CBDCA based	169 (75)	204 (90)	
CDDP based	57 (25)	22 (10)	
Combination with taxane	108 (48)	125 (55)	
Combination with pemetrexed	92 (41)	101 (45)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range; ECOG PS, Eastern Cooperative Oncology Group performance status; CBDCA, carboplatin; CDDP, cisplatin.

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Table S2 Treatment cycles and post-progression therapies in all patients after PSM (N=452)

Patient characteristics	Chemotherapy group (N=226)	ICI plus chemotherapy group (N=226)	P value
Treatment cycle of induction therapy			
Median (IQR)	4 (3-4)	4 (2-4)	0.002
Number of cycles, N (%)			
1	20 (9)	41 (18)	
2	32 (14)	37 (16)	
3	27 (12)	18 (8)	
4 or more	147 (65)	130 (58)	
Subsequent systemic treatment, N (%)			
Administered	176 (78)	117 (52)	
Treatment regimen, N (%)			
Platinum-based chemotherapy	7 (4)	20 (17)	
Non-platinum-based chemotherapy	58 (33)	90 (77)	
ICI plus chemotherapy	1 (1)	3 (3)	
ICI monotherapy	109 (62)	4 (39)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range.

Table S3 Adverse events in all patients after PSM (N=452)

Patient characteristics	Chemotherapy group (N=226)	ICI plus chemotherapy group (N=226)	P value
All AEs of grade 3 or higher, N (%)	82 (36)	109 (48)	0.01
Hematologic AEs, N (%)	50 (22)	54 (24)	0.66
Neutropenia	36 (16)	47 (21)	
Anemia	15 (7)	13 (6)	
Thrombocytopenia	10 (4)	14 (6)	
Non-hematologic AEs, N (%)	41 (18)	63 (28)	0.01
Febrile neutropenia	9 (4)	7 (3)	
Skin disorder	4 (2)	10 (4)	
Endocrine disorder	4 (2)	7 (3)	
Liver dysfunction	3 (1)	9 (4)	
Lung infection	5 (2)	8 (4)	
Renal dysfunction	2 (1)	5 (2)	
Diarrhea/colitis	6 (3)	7 (3)	
Nervous system disorder	2 (1)	5 (2)	
Interstitial pneumonitis of any grade, N (%)	27 (12)	44 (19)	0.03

PSM, propensity score matching; AE, adverse event; ICI, immune checkpoint inhibitor.

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Table S4 Patient characteristics in older patients after PSM (N=118)

Patient characteristics	Chemotherapy group (N=59)	ICI plus chemotherapy group (N=59)	P value
Age (years)			
Median (IQR)	78 (76-80)	77 (76-79)	
Sex, N (%)			
Male	45 (76)	46 (78)	0.83
Female	14 (24)	13 (22)	
Smoking status, N (%)			
Never-smoker	8 (14)	7 (12)	0.78
Current or former smoker	51 (86)	52 (88)	
ECOG PS, N (%)			
0	18 (31)	18 (31)	>0.99
1	41 (69)	41 (69)	
Histology, N (%)			
Squamous cell carcinoma	28 (47)	29 (49)	0.82
Adenocarcinoma	25 (42)	28 (47)	
Other	6 (10)	2 (8)	
Stage, N (%)			
III	7 (12)	4 (7)	0.63
IV	44 (75)	46 (78)	
Recurrence	8 (14)	9 (15)	
Liver metastasis, N (%)	4 (7)	6 (10)	0.51
Brain metastasis, N (%)	6 (10)	3 (5)	0.29
Treatment regimen, N (%)			
Chemotherapy	59 (100)		
Chemotherapy plus pembrolizumab		50 (85)	
Chemotherapy plus atezolizumab		4 (7)	
Chemotherapy plus ipilimumab and nivolumab		5 (8)	
CBDCA based	58 (98)	58 (98)	
CDDP based	1 (2)	1 (2)	
Combination with taxane	35 (59)	33 (56)	
Combination with pemetrexed	15 (25)	26 (44)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range; ECOG PS, Eastern Cooperative Oncology Group performance status; CBDCA, carboplatin; CDDP, cisplatin.

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Table S5 Treatment cycles and post-progression therapies in older patients after PSM (N=118)

Patient characteristics	Chemotherapy group (N=59)	ICI plus chemotherapy group (N=59)	P value
Treatment cycle of induction therapy			
Median (IQR)	4 (2-4)	4 (2-4)	0.23
Number of cycles, N (%)			
1	10 (17)	8 (14)	
2	6 (10)	13 (22)	
3	6 (10)	6 (10)	
4 or more	37 (63)	32 (54)	
Subsequent systemic treatment, N (%)			
Administered	42 (71)	28 (47)	
Treatment regimen, N (%)			
Platinum-based chemotherapy	0 (0)	2 (7)	
Non-platinum-based chemotherapy	18 (43)	24 (86)	
ICI plus chemotherapy	1 (2)	0 (0)	
ICI monotherapy	23 (55)	2 (7)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range.

Table S6 Adverse events in older patients after PSM (N=118)

Patient characteristics	Chemotherapy group (N=59)	ICI plus chemotherapy group (N=59)	P value
All AEs of grade 3 or higher, N (%)	22 (37)	32 (54)	0.07
Hematologic AEs, N (%)	4 (7)	6 (10)	0.51
Neutropenia	4 (7)	2 (3)	
Anemia	0 (0)	3 (5)	
Thrombocytopenia	1 (2)	3 (5)	
Non-hematologic AEs, N (%)	7 (12)	8 (14)	0.78
Febrile neutropenia	0 (0)	0 (0)	
Skin disorder	0 (0)	1 (2)	
Endocrine disorder	0 (0)	0 (0)	
Liver dysfunction	0 (0)	1 (2)	
Lung infection	0 (0)	1 (2)	
Renal dysfunction	0 (0)	1 (2)	
Diarrhea/colitis	0 (0)	0 (0)	
Nervous system disorder	1 (2)	0 (0)	
Interstitial pneumonitis of any grade, N (%)	12 (20)	18 (31)	0.21

PSM, propensity score matching; ICI, immune checkpoint inhibitor; AE, adverse event.

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Table S7 Patient characteristics in older patients with ECOG PS 0 after PSM (N=38)

Patient characteristics	Chemotherapy group (N=19)	ICI plus chemotherapy group (N=19)	P value
Age (years)			
Median (IQR)	79 (77-80)	78 (76-78)	
Sex, N (%)			
Male	16 (84)	17 (89)	0.63
Female	3 (16)	2 (11)	
Smoking status, N (%)			
Never-smoker	0 (0)	0 (0)	>0.99
Current or former smoker	19 (100)	19 (100)	
ECOG PS, N (%)			
0	19 (100)	19 (100)	>0.99
1	0 (0)	0 (0)	
Histology, N (%)			
Squamous cell carcinoma	9 (47)	9 (47)	>0.99
Adenocarcinoma	8 (42)	9 (47)	
Other	2 (11)	1 (5)	
Stage, N (%)			
III	2 (11)	2 (11)	0.93
IV	13 (68)	12 (63)	
Recurrence	4 (21)	5 (26)	
Liver metastasis, N (%)	4 (21)	2 (11)	0.37
Brain metastasis, N (%)	2 (11)	1 (5)	0.54
Treatment regimen, N (%)			
Chemotherapy	19 (100)		
Chemotherapy plus pembrolizumab		16 (84)	
Chemotherapy plus atezolizumab		1 (5)	
Chemotherapy plus ipilimumab and nivolumab		2 (11)	
CBDCA based	19 (100)	18 (5)	
CDDP based	0 (0)	1 (5)	
Combination with taxane	11 (58)	10 (53)	
Combination with pemetrexed	6 (32)	9 (47)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range; ECOG PS, Eastern Cooperative Oncology Group performance status; CBDCA, carboplatin; CDDP, cisplatin.

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Table S8 Patient characteristics in older patients with ECOG PS 1 after PSM (N=78)

Patient characteristics	Chemotherapy group (N=39)	ICI plus chemotherapy group (N=39)	P value
Age (years)			
Median (IQR)	77 (75-79)	77 (76-80)	
Sex, N (%)			
Male	29 (74)	29 (74)	>0.99
Female	10 (26)	10 (26)	
Smoking status, N (%)			
Never-smoker	6 (15)	6 (15)	>0.99
Current or former smoker	33 (85)	33 (85)	
ECOG PS, N (%)			
0	0 (0)	0 (0)	>0.99
1	39 (100)	39 (100)	
Histology, N (%)			
Squamous cell carcinoma	20 (51)	20 (51)	>0.99
Adenocarcinoma	15 (38)	19 (49)	
Other	4 (10)	0 (0)	
Stage, N (%)			
III	6 (15)	3 (8)	0.56
IV	29 (74)	32 (82)	
Recurrence	4 (10)	4 (10)	
Liver metastasis, N (%)	1 (3)	3 (8)	0.29
Brain metastasis, N (%)	3 (8)	3 (8)	>0.99
Treatment regimen, N (%)			
Chemotherapy	59 (100)		
Chemotherapy plus pembrolizumab		30 (77)	
Chemotherapy plus atezolizumab		4 (10)	
Chemotherapy plus ipilimumab and nivolumab		5 (13)	
CBDCA based	38 (97)	39 (100)	
CDDP based	1 (3)	0 (0)	
Combination with taxane	26 (67)	22 (56)	
Combination with pemetrexed	7 (18)	17 (44)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range; ECOG PS, Eastern Cooperative Oncology Group performance status; CBDCA, carboplatin; CDDP, cisplatin.

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Table S9 Treatment cycles and post-progression therapies in older patients with ECOG PS 0 after PSM (N=38)

Patient characteristics	Chemotherapy group (N=19)	ICI plus chemotherapy group (N=19)	P value
Treatment cycle of induction therapy			
Median (IQR)	4 (2-4)	4 (2-4)	0.94
Number of cycles, N (%)			
1	2 (11)	2 (11)	
2	4 (21)	3 (16)	
3	2 (11)	3 (16)	
4 or more	11 (58)	11 (58)	
Subsequent systemic treatment, N (%)			
Administered	15 (79)	9 (47)	
Treatment regimen, N (%)			
Platinum-based chemotherapy	0 (0)	2 (22)	
Non-platinum-based chemotherapy	10 (67)	5 (56)	
ICI plus chemotherapy	1 (7)	1 (11)	
ICI monotherapy	4 (27)	1 (11)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range; ECOG PS, Eastern Cooperative Oncology Group performance status.

Table S10 Adverse events in older patients with ECOG PS 0 after PSM (N=38)

Patient characteristics	Chemotherapy group (N=19)	ICI plus chemotherapy group (N=19)	P value
All AEs of grade 3 or higher, N (%)	8 (42)	11 (58)	0.33
Hematologic AEs, N (%)	5 (26)	3 (16)	0.43
Neutropenia	4 (21)	1 (5)	
Anemia	0 (0)	1 (5)	
Thrombocytopenia	1 (5)	1 (5)	
Non-hematologic AEs, N (%)	3 (16)	6 (32)	0.25
Febrile neutropenia	0 (0)	0 (0)	
Skin disorder	1 (5)	1 (5)	
Endocrine disorder	0 (0)	2 (11)	
Liver dysfunction	1 (5)	3 (16)	
Lung infection	0 (0)	1 (5)	
Renal dysfunction	0 (0)	0 (0)	
Diarrhea/colitis	0 (0)	0 (0)	
Nervous system disorder	1 (2)	0 (0)	
Interstitial pneumonitis of any grade, N (%)	5 (26)	4 (21)	0.70

PSM, propensity score matching; ICI, immune checkpoint inhibitor; AE, adverse event; ECOG PS, Eastern Cooperative Oncology Group performance status.

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Table S11 Treatment cycles and post-progression therapies in older patients with ECOG PS 1 after PSM (N=78)

Patient characteristics	Chemotherapy group (N=39)	ICI plus chemotherapy group (N=39)	P value
Treatment cycle of induction therapy			
Median (IQR)	4 (3-4)	3 (2-4)	0.04
Number of cycles, N (%)			
1	8 (21)	8 (21)	
2	1 (3)	10 (26)	
3	4 (10)	4 (10)	
4 or more	26 (67)	17 (44)	
Subsequent systemic treatment, N (%)			
Administered	27 (69)	19 (49)	
Treatment regimen, N (%)			
Platinum-based chemotherapy	0 (0)	2 (11)	
Non-platinum-based chemotherapy	9 (33)	17 (89)	
ICI plus chemotherapy	0 (1)	0 (0)	
ICI monotherapy	18 (67)	0 (0)	

PSM, propensity score matching; ICI, immune checkpoint inhibitor; IQR, interquartile range; ECOG PS, Eastern Cooperative Oncology Group performance status.

Table S12 Adverse events in older patients with ECOG PS 1 after PSM (N=78)

Patient characteristics	Chemotherapy group (N=39)	ICI plus chemotherapy group (N=39)	P value
All AEs of grade 3 or higher, N (%)	16 (41)	22 (56)	0.17
Hematologic AEs, N (%)	9 (23)	15 (38)	0.14
Neutropenia	6 (15)	13 (33)	
Anemia	3 (8)	7 (18)	
Thrombocytopenia	2 (5)	3 (8)	
Non-hematologic AEs, N (%)	3 (8)	5 (13)	0.46
Febrile neutropenia	3 (8)	0 (0)	
Skin disorder	0 (0)	1 (3)	
Endocrine disorder	0 (0)	0 (0)	
Liver dysfunction	0 (0)	1 (3)	
Lung infection	0 (0)	2 (5)	
Renal dysfunction	0 (0)	1 (3)	
Diarrhea/colitis	0 (0)	0 (0)	
Nervous system disorder	1 (2)	0 (0)	
Interstitial pneumonitis of any grade, N (%)	8 (21)	11 (28)	0.70

PSM, propensity score matching; ICI, immune checkpoint inhibitor; AE, adverse event; ECOG PS, Eastern Cooperative Oncology Group performance status.

https://dx.doi.org/10.21037/tlcr-2024-1236