**Supplementary Table A.** Systemic treatment: Characterization and description.

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| --- | --- |
| **Systemic treatment for the Stage IV tumor**, n (%)  Yes No | **297 (100.0%)**265 (89.2%)32 (10.8%) |
| **Time elapsed between start of systemic treatment and histologic diagnosis of Stage IV NSCLC (days)**1, n (%) Median (P25; P75) | **260 (100%)**31.00 (22.00 ; 43.00)  |
| **Treatment decision time**2, n (%)Previous to PD-L1 testing resultsAfter to PD-L1 testing results | **257 (100.0%)**19 (7.4%)238 (92.6%) |
| **Type of systemic treatment – categories**3 n (%)Platinum-doubletsChemotherapy (CT) monotherapyPlatinum-doublet-AntiangiogenicIO monotherapyPlatinum-doublet- IOIO-IO | **265 (100.0%)**142 (53.6%)5 (1.9%)1 (0.4%)71 (26.8%)39 (14.7%)6 (2.3%) |
| **Type of systemic treatment** n (%)Carboplatin + nab-paclitaxelCisplatin + pemetrexedCarboplatin + pemetrexedCisplatin + paclitaxelCarboplatin + paclitaxelCisplatin + gemcitabineCarboplatin + gemcitabineVinorelbine monotherapyPembrolizumab monotherapy Atezolizumab monotherapyCombo immunotherapy + chemotherapy4Combo immunotherapy + immunotherapy5 Other6 | **265 (100.0%)**2 (0.8%)38 (14.3%)50 (18.9%)1 (0.4%)14 (5.3%)8 (3.0%)8 (3.0%)1 (0.4%)66 (24.9%)2 (0.8%)39 (14.7%)6 (2.3%)30 (11.3%) |
| Table A summarizes all the treatment schemes used at the time of the study to show the different options and preferences in Spain:*1 Difference in days between Date of systemic treatment start and Date of diagnosis (missing results, n = 5)**2 Treatment decision previous or after to PD-L1 testing results (missing results, n = 8)**3Based on the following grouping:- Platinum-doublets: cisplatin + nab-paclitaxel; carboplatin + nab-paclitaxel; cisplatin + pemetrexed; carboplatin + pemetrexed; cisplatin + paclitaxel; carboplatin + paclitaxel; cisplatin + gemcitabine; carboplatin + gemcitabine; carboplatin + vinorelbine; cisplatin + vinorelbine; carboplatin + etoposide; cisplatin + etoposide; carboplatin + docetaxel - Chemotherapy (CT) monotherapy: gemcitabine monotherapy; vinorelbine monotherapy; paclitaxel monotherapy; docetaxel; pemetrexed, carboplatin- Platinum-doublet-Antiangiogenic: cisplatin + paclitaxel + bevacizumab; carboplatin + paclitaxel + bevacizumab; cisplatin + gemcitabine + bevacizumab; carboplatin + gemcitabine + bevacizumab; carboplatin + pemetrexed + bevacizumab- IO monotherapy: pembrolizumab monotherapy; nivolumab monotherapy; atezolizumab monotherapy; eftilagimod monotherapy- Platinum-doublet-IO- IO-IO- Platinum-doublet-Antiangiogenic-IO: cisplatin + paclitaxel + bevacizumab + atezolizumab; carboplatin + paclitaxel + bevacizumab + atezolizumab- IO-Antiangiogenic: atezolizumab + bevacizumab**4 Combo immunotherapy + chemotherapy (n=39): n=24 Carboplatin + Pemetrexed + Pembrolizumab; n=11 Cisplatin + Pemetrexed + Pembrolizumab; n=1 Carboplatin + Paclitaxel + Pembrolizumab; n=1 Carboplatin + Pemetrexed + Atezolizumab; n=1 Cisplatin + Pemetrexed + Pembrolizumab + Canakinumab; n=1 Pemetrexed + Pembrolizumab**5 Combo immunotherapy + immunotherapy (n=6): n=6 Pembrolizumab + Eftilagimod**6 Other systemic treatments (n=30): n=14 Carboplatin + Vinorelbine; n=4 Cisplatin + Vinorelbine; n=1 Eftilagimod; n=2 Carboplatin; n=1 Carboplatin + Docetaxel; n=1 Carboplatin + Etoposide; n=1 Cisplatin + Etoposide; n=1 Docetaxel; n=1 INCMGA0012 (immunotherapy); n=1 NCMGA00012 (clinical trial immunotherapy); n=1 Pemetrexed; n=1 Carboplatin + Pemetrexed + Bevacizumab; n=1 Atezolizumab + Bevacizumab* |

**Supplementary Table B.** PD-L1 expression by clinico-pathological characteristics.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **PD-L1****<1%** | **PD-L1****1-49%** | **PD-L1****≥50%** | **p-value** |
| **Total Patients n=287** | 115 (40.1) | 77 (26.8) | 92 (32.1) |
|  **Gender, n=284 *(%)*** |
| Male | 89 (40.8) | 61 (28) | 68 (31.2) | 0.7029 |
| Female | 26 (39.4) | 16 (24.2) | 24 (36.4) |
| **p-value1** | 0.8352 | 0.5492 | 0.4319 |  |
|  **Age, n=284 *(%)*** |
| ≤75 | 93 (41.3) | 63 (28) | 69 (30.7) | 0.4720 |
| >75 | 22 (37.3) | 14 (23.7) | 23 (39) |
| **p-value1** | 0.5734 | 0.5112 | 0.2244 |  |
| **Smoking history, n=284 *(%)*** |
| Never smoked | 11 (39.3) | 6 (21.4) | 11 (39.3) | 0.6989 |
| Smoker | 48 (42.1) | 34 (29.8) | 32 (28.1) |
| Former smoker | 54 (38.8) | 36 (25.9) | 49 (35.3) |
| **ECOG, n=282 *(%)*** |
| 0-1 | 78 (37.3) | 59 (28.2) | 72 (34.4) | 0.1196 |
| ≥2 | 37 (50.7) | 18 (24.7) | 18 (24.7) |
| **p-value1** | 0.0455 | 0.5552 | 0.1223 |  |
|  **Histology, n=284 *(%)*** |
| Squamous | 16 (31.4) | 21 (41.2) | 14 (27.5) | **0.0433** |
| Non-squamous | 99 (42.5) | 56 (24) | 78 (33.5) |
| **p-value1** | 0.1429 | 0.0126 | 0.4048 |  |

*1 z-ratio, two independent proportions*