**Supplemental Figure and Tables**

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**Figure e-1. For all ALS samples within cohort 1, there is no correlation with disease duration and CSF IL6 or serum IL6. Additionally, CSF IL6 is not a simple reflection of serum IL6 levels within these patients.** (A) CSF and serum IL6 ρ=0.12, p = 0.44. (B) CSF IL6 and disease duration ρ=0.18, p = 0.25; serum IL6 and disease duration ρ=0.18, p = 0.25. All are Spearman’s correlations. Line of best fit and R2 by linear regression.

**Table e-1 – Raw values after winsorizing to within two standard deviations of the mean of the original distribution**

SERUM mean, ±SD

|  |  |  |  |
| --- | --- | --- | --- |
| Group (n#) | IL6 (pg/mL) | IL6R (ng/mL) | sgp130 (ng/mL) |
| ALS (47) | 2.85, ±1.25 | 62.9, ±25.5 | 307, ±39 |
| ALS-AA (18) | 2.47, ±0.80 | 42.7, ±16.3 | 303, ±40 |
| ALS-C (29) | 3.08, ±1.43 | 75.5, ±21.8 | 309, ±39 |
| HC (46) | 2.14, ±0.91 | 57.6, ±23.6 | 301, ±53 |
| HC-AA (18) | 2.16, ±0.76 | 41.1, ±18.3 | 279, ±44 |
| HC-C (28) | 2.14, ±1.01 | 67.6, ±20.8 | 312, ±55 |
| NC (23) | 2.66, ±1.23 | 55.1, ±24.2 | 288, ±42 |
| NC-AA (9) | 2.58, ±1.52 | 38.4, ±22.1 | 289, ±36 |
| NC-C (14) | 2.35, ±0.77 | 65.8, ±19.3 | 284, ±48 |

CSF mean, ±SD

|  |  |  |  |
| --- | --- | --- | --- |
| Group (n#) | IL6 (pg/mL) | IL6R (ng/mL) | sgp130 (ng/mL) |
| ALS (47) | 2.83, ±1.46 | 1.08, ±0.32 | 44.3, ±14.4 |
| ALS-AA (18) | 2.33, ±0.69 | 0.95, ±0.30 | 41.5, ±13.7 |
| ALS-C (21) | 3.15, ±1.71 | 1.17, ±0.31 | 46.5, ±14.7 |
| HC (46) | 2.08, ±0.77 | 1.02, ±0.25 | 48.4, ±13.8 |
| HC-AA (18) | 2.25, ±1.00 | 0.97, ±0.22 | 53.8, ±14.5 |
| HC-C (21) | 1.96, ±0.58 | 1.06, ±0.26 | 45.7, ±12.7 |
| NC (23) | 2.47, ±1.37 | 1.07, ±0.28 | 43.8, ±9.4 |
| NC-AA (9) | 2.08, ±0.76 | 1.01, ±0.39 | 36.7, ±10.3 |
| NC-C (14) | 2.87, ±1.08 | 1.11, ±0.18 | 45.3, ±9.5 |

**Table e-2. Regression model**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Regression Equation | r2 | P-value | 95% CI |
| serum IL6 (pg/ml) | 1.17 + 0.026\*age at draw | 0.08 | 0.002 | 0.011 to 0.043 |

**Table e-3. Planned individual comparisons of C allele carriers within group and of groups within C allele carriers and non-carriers**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Ln(CSF IL6)a | Serum IL6b | CSF sIL6Ra | Serum sIL6Ra | CSF sgp130a | Serum sgp130a |
| ALS AA vs \*C | 0.021 | NS 0.19 | 0.021 | <0.001 | NS 0.26 | NS 0.62 |
| HC AA vs \*C | NS 0.39 | NS 0.87 | NS 0.19 | <0.001 | NS 0.13 | NS 0.06 |
| DC AA vs \*C | NS 0.94 | NS 0.46 | NS 0.47 | <0.01 | NS 0.27 | NS 0.81 |
| \*C ALS vs HC | <0.001 | 0.045 | NS 0.14 | NS 0.16 | NS 0.83 | NS 0.87 |
| \*C ALS vs DC | 0.039 | NS 0.98 | NS 0.51 | NS 0.16 | NS 0.60 | NS 0.12 |
| AA ALS vs HC | NS 0.62 | NS 0.59 | NS 0.85 | NS 0.80 | 0.042 | NS 0.12 |
| AA ALS vs DC | NS 0.90 | NS 0.89 | NS 0.62 | NS 0.57 | NS 0.74 | NS 0.42 |

a = comparison by 2-sided students t-test; b = comparison by GLM followed by Fishers protected LSD