**Pre-treatment predictors of post-treatment fatigue at 18 months**

**Sample size**

In the original dataset, there were 270 patients. Out of the 270 patients, 206 patients had cancer treatment of chemotherapy and/or radiation. Out of the 206 patients, 186 patients had valid input of the outcome variable post-treatment SF-36 Vitality Score at 18 months.

**Descriptive Statistics**

* Categorical Predictors in Number (%)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample Characteristics** | **Overall (N = 186)**  **(Column %)** | **Fatigue (N = 62)**  **(Row %)** | **Not Fatigue (N = 124)**  **(Row %)** | **Bivariate p-value** |
| ***SF-vitality score (Baseline)*** |  |  |  | 0.0007\*\*\* |
| Fatigue (<=45) | 59 (31.7%) | 30 | 29 |  |
| Not fatigue (>45) | 127 (68.3%) | 32 | 95 |  |
| ***Race*** |  |  |  | 0.65 |
| White | 128 (68.8%) | 44 | 84 |  |
| Non-White | 58 (31.2%) | 18 | 40 |  |
| ***Education*** |  |  |  | 0.22 |
| At most a high school degree | 54 (29.0%) | 21 | 33 |  |
| College graduate | 75 (40.3%) | 27 | 48 |  |
| Post-graduate degree | 57 (30.6%) | 14 | 43 |  |
| ***Employment*** |  |  |  | 0.59 |
| Yes | 116 (62.4%) | 37 | 79 |  |
| No | 70 (37.6%) | 25 | 45 |  |
| ***Married*** |  |  |  | 0.59 |
| Yes | 122 (65.6%) | 39 | 83 |  |
| No | 64 (34.4%) | 23 | 41 |  |
| ***Surgery Type*** |  |  |  | 0.56 |
| Neochemo | 21 (11.3%) | 5 | 16 |  |
| Lumpectomy | 133 (71.5%) | 45 | 88 |  |
| Mastectomy | 32 (17.2%) | 12 | 20 |  |
| ***Cancer treatment received*** |  |  |  | 0.67 |
| Chemo only | 20 (10.8%) | 8 | 12 |  |
| Radiation only | 99 (53.2%) | 34 | 65 |  |
| Chemo + radiation | 67 (36.0%) | 20 | 47 |  |
| ***CTQ: Childhood trauma*** |  |  |  | 0.33 |
| No childhood maltreatment | 123 (66.1%) | 38 | 85 |  |
| Any maltreatment | 63 (33.9%) | 24 | 39 |  |
| ***Attachment - baseline (SPS)*** |  |  |  | 0.14 |
| <16 | 56 (30.1%) | 23 | 33 |  |
| 16 | 130 (69.9%) | 39 | 91 |  |
| ***Prior history of depression*** |  |  |  | 0.08 |
| Yes | 37 (19.9%) | 17 | 20 |  |
| No | 147 (79.0%) | 45 | 102 |  |
| Missing | 2 (1.1%) | 1 (50.0%) | 1 (50.0%) |  |
| ***SNPs – TNF high alleles*** |  |  |  | 0.65 |
| 2 | 103 (55.4%) | 31 | 72 |  |
| 0/1 | 32 (17.2%) | 11 | 21 |  |
| Missing | 51 (27.4%) | 20 (39.2%) | 31 (60.8%) |  |
| ***SNPs – IL6 high alleles*** |  |  |  | 0.30 |
| 2 | 65 (34.9%) | 23 | 42 |  |
| 0/1 | 70 (37.6%) | 19 | 51 |  |
| Missing | 51 (27.4%) | 20 (39.2%) | 31 (60.8%) |  |
| ***SNPs – IL1B high alleles*** |  |  |  | 0.41 |
| 2/1 | 121 (65.1%) | 39 | 82 |  |
| 0 | 14 (7.5%) | 3 | 11 |  |
| Missing | 51 (27.4%) | 20 (39.2%) | 31 (60.8%) |  |

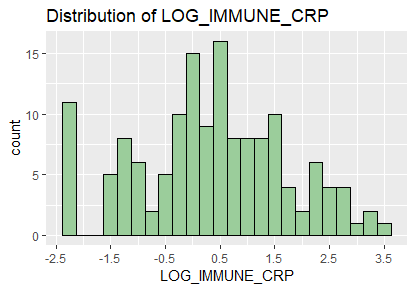
* Continuous Predictors in Mean ± standard deviation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample Characteristics** | **Overall**  **(N = 186)** | **Fatigue**  **(N = 62)** | **Not Fatigue**  **(N = 124)** | **Bivariate p-value** |
| SF-36 vitality score - baseline | 58.1 ± 21.8 | 46.1 ± 21.5 | 64.2 ± 19.4 | 6.71e-07 \*\*\* |
| MFSI-general - baseline | 7.0 ± 5.7 | 10.0 ± 6.5 | 5.5 ± 4.6 | 1.74e-06 \*\*\* |
| Age - baseline | 55.2 ± 11.1 | 54.5 ± 11.8 | 55.5 ± 10.8 | 0.53 |
| BMI - baseline | 25.7 ± 5.9 | 25.5 ± 6.1 | 25.7 ± 5.9 | 0.86 |
| Charlson comorbidity index | 0.28 ± 0.60 | 0.40 ± 0.71 | 0.23 ± 0.52 | 0.06 |
| Impact of Events Scale – baseline (IES)\* | 1.7 ± 1.3 | 2.1 ± 1.4 | 1.6 ± 1.2 | 0.013\* |
| Fatigue Catastrophizing Scale -baseline (FCS)\* | 1.5 ± 0.55 | 1.7 ± 0.64 | 1.3 ± 0.45 | 9.49e-05 \*\*\* |
| Perceived Stress Scale – baseline (PSS)\* | 14.5 ± 6.7 | 17.5 ± 6.9 | 13.0 ± 6.1 | 3.51e-05 \*\*\* |
| Pittsburgh Sleep Quality Index – baseline (PSQI) | 6.9 ± 3.8 | 8.9 ± 3.8 | 5.9 ± 3.4 | 2.45e-06 \*\*\* |
| CESD - baseline | 11.3 ± 9.8 | 16.7 ± 11.1 | 8.6 ± 7.8 | 1.68e-06 \*\*\* |
| Circulating inflammatory markers – baseline \*\* |  |  |  |  |
| Log(CRP) | 0.32 ± 1.4 | 0.56 ± 1.4 | 0.21 ± 1.4 | 0.17 |

\*Note: IES, FCS, and PSS at baseline have overall N=185, fatigue N = 61, non-fatigue N = 124

\*\*Note: Circulating inflammatory markers have overall N=139, fatigue N = 45, non-fatigue N = 94

**Univariate Distributions of Log-transformed immune CRP**



**Multivariate Logistic Regression Model (AIC=175.97)**

|  |  |  |
| --- | --- | --- |
|  | **Coefficient Estimate** | **p-value** |
| (Intercept) | -5.4 | 0.036\* |
| AGE\_BL | -0.019 | 0.47 |
| BMI\_BL | -0.0079 | 0.88 |
| SF-vitality score (dichotomous) - baseline | 0.16 | 0.79 |
| white | 0.85 | 0.16 |
| Edu - At most a high school degree | -0.077 | 0.90 |
| Edu - College graduate | -0.23 | 0.70 |
| Employed | -0.084 | 0.88 |
| MARRIED | -0.14 | 0.79 |
| Lumpectomy | 0.77 | 0.40 |
| Mastectomy | 0.35 | 0.73 |
| Chemo only | -0.51 | 0.57 |
| Radiation only | -0.46 | 0.44 |
| Charlson | 0.50 | 0.22 |
| Ctq - Any childhood maltreatment | -0.35 | 0.51 |
| Prior history of depression | 0.48 | 0.45 |
| IES\_BL | -0.26 | 0.30 |
| FCS\_BL | 0.91 | 0.19 |
| PSS\_BL | -0.064 | 0.30 |
| PSQI\_BL | 0.31 | 0.0015\*\* |
| CESD\_BL | 0.040 | 0.35 |
| SPS Attachment – Max | -0.13 | 0.84 |
| tnf\_2cat | 0.59 | 0.34 |
| il6\_2cat | 0.58 | 0.33 |
| il1b\_2cat | 1.6 | 0.11 |
| LOG\_IMMUNE\_CRP | 0.29 | 0.22 |

Note: 51 objects were deleted due to missing values, leaving a total sample size of 142 for this model.

**ANOVA p-values for Log-transformed Immune CRP vs. SNPs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | tnf\_2cat | il6\_2cat | il1b\_2cat |
| LOG\_IMMUNE\_CRP | 0.36 | 0.79 | 0.19 |

**Variable Selection using Stepwise AIC**

* Overall model selection (**AIC =143.67)**

|  |  |  |
| --- | --- | --- |
|  | **Coefficient Estimate** | **p-value** |
| (Intercept) | -4.9 | 1.7E-06\*\*\* |
| White | 0.8 | 0.15 |
| FCS\_BL | 0.93 | 0.033\* |
| PSQI\_BL | 0.24 | 0.00046\*\*\* |
| Il6\_2cat | 0.71 | 0.13 |