Table 2: Parameter estimates for the longitudinal model for SCr.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Mean** | **Std. Dev** | **2.5%** | **97.5%** | **P** |
| Intercept | 5.226 | 0.080 | 5.064 | 5.378 | <0.000 |
| Receiver age | -0.063 | 0.022 | -0.107 | -0.019 | 0.010 |
| Donor age | 0.083 | 0.020 | 0.045 | 0.119 | <0.000 |
| Donor BMI | -0.011 | 0.021 | -0.054 | 0.028 | 0.612 |
| Receiver BMI | 0.018 | 0.023 | -0.025 | 0.060 | 0.420 |
| #HLA mismatches between donor and recipient | 0.020 | 0.022 | -0.022 | 0.065 | 0.342 |
| Panel reactive antibody percentage | 0.048 | 0.027 | -0.008 | 0.100 | 0.082 |
| #Anti-hypertensive medicaments | 0.040 | 0.020 | 0.001 | 0.080 | 0.048 |
| Cold ischemia time | 0.029 | 0.035 | -0.039 | 0.102 | 0.390 |
| #Days on dialysis before transplant | 0.015 | 0.029 | -0.042 | 0.071 | 0.580 |
| Receiver gender: Male | 0.197 | 0.042 | 0.111 | 0.276 | <0.000 |
| Previous transplant: Yes | 0.016 | 0.064 | -0.115 | 0.141 | 0.786 |
| Donor gender: Male | 0.053 | 0.042 | -0.027 | 0.136 | 0.198 |
| Delayed graft function: Yes | 0.118 | 0.049 | 0.025 | 0.216 | 0.006 |
| Diabetes Mellitus: Yes | -0.103 | 0.059 | -0.217 | 0.012 | 0.076 |
| Cardiovascular events before transplantation: Yes | -0.047 | 0.043 | -0.129 | 0.044 | 0.272 |
| Deceased donor: Yes | 0.163 | 0.082 | 0.004 | 0.313 | 0.044 |
| Spline: visit time [0.039, 0.082] years | -0.440 | 0.041 | -0.517 | -0.358 | <0.000 |
| Spline: visit time [0.082, 0.219] years | -0.182 | 0.053 | -0.284 | -0.081 | <0.000 |
| Spline: visit time [0.219, 1] years | -0.545 | 0.081 | -0.712 | -0.395 | <0.000 |
| Spline: visit time [1, 6] years | 0.007 | 0.083 | -0.155 | 0.176 | 0.946 |
|  | 0.190 | 0.001 | 0.187 | 0.192 |  |

Table 3: Parameter estimates for the longitudinal model for PCR.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Mean** | **Std. Dev** | **2.5%** | **97.5%** | **P** |
| Intercept | 3.731 | 0.179 | 3.398 | 4.083 | <0.000 |
| Receiver age | 0.030 | 0.052 | -0.066 | 0.138 | 0.604 |
| Donor age | 0.209 | 0.047 | 0.118 | 0.301 | <0.000 |
| Donor BMI | -0.019 | 0.051 | -0.121 | 0.084 | 0.716 |
| Receiver BMI | -0.116 | 0.050 | -0.219 | -0.021 | 0.014 |
| #HLA mismatches between donor and recipient | -0.013 | 0.049 | -0.112 | 0.086 | 0.776 |
| Panel reactive antibody percentage | 0.047 | 0.061 | -0.066 | 0.166 | 0.446 |
| #Anti-hypertensive medicaments | 0.056 | 0.047 | -0.03 | 0.147 | 0.208 |
| Cold ischemia time | 0.062 | 0.082 | -0.097 | 0.211 | 0.468 |
| #Days on dialysis before transplant | 0.006 | 0.066 | -0.120 | 0.134 | 0.952 |
| Receiver gender: Male | -0.026 | 0.094 | -0.207 | 0.166 | 0.798 |
| Previous transplant: Yes | 0.035 | 0.149 | -0.241 | 0.332 | 0.816 |
| Donor gender: Male | 0.114 | 0.096 | -0.079 | 0.303 | 0.228 |
| Delayed graft function: Yes | 0.043 | 0.118 | -0.174 | 0.275 | 0.740 |
| Diabetes Mellitus: Yes | 0.153 | 0.135 | -0.124 | 0.396 | 0.256 |
| Cardiovascular events before transplantation: Yes | -0.016 | 0.106 | -0.221 | 0.199 | 0.890 |
| Deceased donor: Yes | 0.144 | 0.193 | -0.246 | 0.509 | 0.462 |
| Spline: visit time [0.039, 0.082] years | -0.821 | 0.090 | -0.989 | -0.638 | <0.000 |
| Spline: visit time [0.082, 0.219] years | -0.578 | 0.131 | -0.838 | -0.304 | <0.000 |
| Spline: visit time [0.219, 1] years | -0.898 | 0.160 | -1.218 | -0.587 | <0.000 |
| Spline: visit time [1, 6] years | 0.460 | 0.234 | 0.015 | 0.927 | 0.036 |
|  | 0.479 | 0.004 | 0.472 | 0.486 |  |

Table 4: Relative risk submodel estimates for the log hazard ratio and 95% credible interval.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Mean** | **Std. Dev** | **2.5%** | **97.5%** | **P** |
| Previous transplant: Yes | 0.305 | 0.339 | -0.099 | 0.986 | 0.352 |
| #HLA mismatches between donor and recipient | 0.048 | 0.093 | -0.144 | 0.269 | 0.620 |
| Cold ischemia time | -0.051 | 0.105 | -0.277 | 0.133 | 0.644 |
| #Days on dialysis before transplant | -0.013 | 0.102 | -0.251 | 0.178 | 0.934 |
| log PCR | 0.145 | 0.125 | -0.056 | 0.431 | 0.188 |
| slope(log PCR) | 0.021 | 0.058 | -0.076 | 0.145 | 0.828 |
| log SCr | 1.599 | 0.241 | 1.067 | 2.063 | <0.000 |
| slope(log SCr) | 0.203 | 0.123 | -0.017 | 0.443 | 0.082 |

Table 5: Area under curve characteristics for the JMs fitted to the kidney transplant data set.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Biomarkers** | **Year 0.5** | **Year 1** | **Year 1.5** | **Year 2** | **Year 2.5** | **Year 3** |
| Both SCr and PCR | 0.845 | 0.927 | 0.915 | 0.828 | 0.953 | 0.686 |
| Only SCr | 0.801 | 0.901 | 0.918 | 0.866 | 0.957 | 0.692 |
| Only PCR | 0.844 | 0.858 | 0.755 | 0.640 | 0.825 | 0.473 |



