

Supplementary Materials

Table S1. Results from the mixed_2 simulated data with $\Delta = -0.50$ by groups defined by the ratio of rapidly progressing patients in the drug and placebo arms.

| $\Delta = -0.50$, High RP Ratio on Drug ($\geq 1.5\times$ more RP on drug, 27% of data sets) | | | | |
|--|-----------------|----------------------|---------------|----------------------------|
| Analysis | Mean Δ^1 | Mean SE ² | SD Δ^3 | % Significant ⁴ |
| MMRM | -0.3515 | 0.2121 | 0.1868 | 36.94 |
| HL | -0.4347 | 0.2075 | 0.2001 | 55.06 |
| RR | -0.5009 | 0.1775 | 0.1772 | 80.27 |
| $\Delta = -0.50$, High RP Ratio on Placebo ($\geq 1.5\times$ more RP on placebo, 27% of data sets) | | | | |
| Analysis | Mean Δ^1 | Mean SE ² | SD Δ^3 | % Significant ⁴ |
| MMRM | -0.5901 | 0.2091 | 0.2059 | 81.64 |
| HL | -0.5565 | 0.2090 | 0.2061 | 75.64 |
| RR | -0.5293 | 0.1774 | 0.1814 | 84.13 |
| $\Delta = -0.50$, Balanced RP Ratio ($<1.5\times$ more RP on drug and placebo, 46% of data sets) | | | | |
| Analysis | Mean Δ^1 | Mean SE ² | SD Δ^3 | % Significant ⁴ |
| MMRM | -0.4785 | 0.2127 | 0.1834 | 62.51 |
| HL | -0.5017 | 0.2089 | 0.2020 | 67.41 |
| RR | -0.5204 | 0.1780 | 0.1786 | 83.02 |

¹ Mean estimated treatment difference from the 10,000 data sets;
² Mean standard error of the treatment difference from the 10,000 data sets;
³ Standard deviation of the estimated treatment differences from the 10,000 data sets;
⁴ Percent of data sets with a statistically significant treatment difference ($\alpha = 0.05$).