

Identifying patient subpopulations of unmet need using biomarker expression analysis and real-world clinical response data

In this case study, we examine how Tempus EXPLORE can support correlative analyses between biomarker expression levels and patient outcomes on standard-of-care therapies.

RESEARCH QUESTION

The Translational Medicine team at a clinical-stage biopharmaceutical company (“the Company”) was interested in understanding the relationship between expression levels of their biomarker of interest and clinical outcomes for gastric/ GEJ cancer patients treated with standard-of-care regimens. But given resource constraints and limited access to the relevant patient data, the Company was unable to perform the required analysis in-house.

RESULTS & ANALYSIS

Through Tempus EXPLORE, the Company gained access to the full Tempus oncology database of de-identified records via Tempus bioinformatics experts. Tempus devised a threshold for biomarker RNA expression using an optimal cutoff to maximize significance across multiple treatment regimens. By applying that threshold to real-world outcomes data, Tempus was able to confirm the Company’s hypothesis

that biomarker-high patients have worse outcomes to prior treatment with standard-of-care regimens than do biomarker-low expressing patients (see Figure 1).

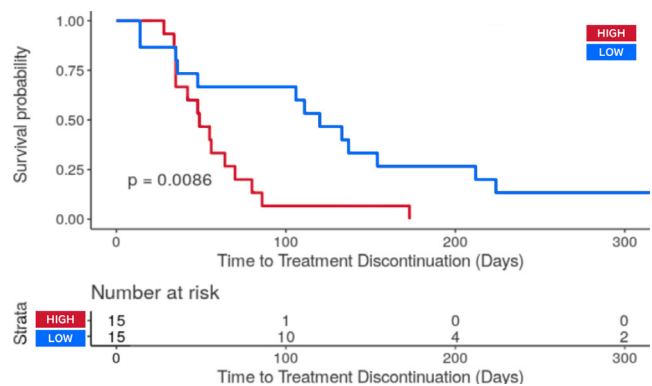


Figure 1. Time to treatment discontinuation is significantly faster in biomarker-high vs biomarker-low patients

IMPACT

These findings served to reinforce the substantial unmet need for this subpopulation of gastric/ GEJ cancer patients, identified several approved standard-of-care therapies to investigate further for possible use in combination regimens, and ultimately supported continued clinical development of the Company’s lead asset. Importantly, the analysis was completed substantially faster and at a lower cost compared to using the Company’s internal resources.

Tempus EXPLORE is a cost-efficient research tool that provides access to the Tempus oncology database of de-identified records via Tempus bioinformatics experts, leading to powerful research insights with a rapid turnaround time