Cytel

Enabling an Adaptive SSR Design in Oncology

Executive Summary

Primary Question

How to design an adaptive sample size reassessment design that can provide better results compared to the client's group sequential design (GSD) option?

Key Results

- The client's original GSD was improved using Solara.
- The Cytel team customized the design for the clients to ensure that the timing of interim analyses met their business requirements.
- Cytel consultants successfully delivered an adaptive SSR design within a 12-week consultancy period.

Overview

A large pharmaceutical client requested consultancy on an adaptive Sample Size Reassessment (SSR) design option, for a large Phase III oncology study, subsequently to be compared with a Group Sequential Design (GSD) that was built internally by the client. The final decision was to be made by the senior level governance committee.

Methods and Result

Cytel consultants worked to improve both the GSD and the SSR design. A review of the GSD using Cytel's clinical trial strategy platform Solara® revealed that similar power could be achieved with fewer events, compared to the client's original design. This learning was transferred to the Adaptive SSR design that was built using Cytel's East® software.

The Cytel team provided:

- High-Level Design Reports for the considered design options
- Regulatory-Ready Trial Simulation Report for the final design
- Regulatory-Ready Interim Statistical Analysis Plan outlining the statistical procedures for the interim and final analyses under the adaptive design
- Example protocol text describing the statistical procedures for the adaptations
- Draft responses to FDA and EMA questions

The senior governance committee finally chose the Adaptive SSR design for its benefits of reduced sample size by 700 patients and increased potential of stopping for efficacy 12 months early. The design also mitigated the risk of a variable treatment effect while maintaining the required power, probability of success, and controlling type 1 error. The SSR design received regulatory acceptance based on the responses provided to questions on the statistical design.

ROI Summary

Average Study Duration	Average Study Cost	Sample Size
20%	$28.8M	14%