Using Synthetic Control Databases to Accelerate Indication-Specific Safety and Efficacy Evidence

Introduction

Synthetic control databases (SCDs) of recent clinical trial data are one potential tool for accelerating the generation of evidence. SCNs may provide rigorous pooled clinical data beyond that available in published literature and have certain advantages over real-world data (RWD).

SCDs may aid in planning, executing, and interpreting clinical trials through: understanding patient characteristics, defining efficacy targets, describing background AE rates prior to a specific event and expected relationship between variables.

Austim trial has been ongoing to develop and evaluate use of SCD for metastatic breast cancer (mBC). Version 1 was delivered October 2018 and the SCD has subsequently been updated quarterly.

SCD Concept

An aggregated dataset of multiple (> thousands) of patients from multiple recent trials is chosen to match a researcher’s inclusion / exclusion criteria for an indication.

SCD Insights: Offers Greater Detail and Compares Well with Published Literature

Current Status of Pilot SCD

The SCD includes 1528 mBC patients from 10 Phase II & III clinical trials at all lines of therapy. 

CDK4/6i treated, etc.) and other factors.

SCDs have potential to aid research programs and future study designs by providing access to contemporary, robust, and prospective data on patients, treatments, and outcomes. The large majority (>90%) of patients are from trials in 2nd or later line of therapy.

The SCD includes >190 patient characteristic, efficacy and safety variables, such as: treatment history (chemo eligible, or later line), line of therapy, therapy, menopausal status, relapsed / refractory, etc. Current restriction to open-label trials with RECIST (for TNBC). The SCD is used to generate clinically relevant subgroups for benchmarking efficacy and safety outcomes, insights into disease subsets and correlations between short and long-term endpoints.

If these challenges are addressed, possible future is for evidence derived from SCDs of external clinical trials to be incorporated in regulatory decisions.

Conclusions

SCDs have potential to aid research programs and future study designs by providing access to contemporary, robust, and prospective data on patients, treatments and outcomes. However, questions addressed by SCNs are limited to the data collected in the underlying studies. SCNs are purely descriptive in nature and the type/format of data collected, submission of raw data and harmonisation are required when creating the SCD. Industry standardisation (e.g., CRFs, data structure) will facilitate creation and use of SCDs.

Arguably SCNs provide higher level data quality and patients who are more similar to clinical trial patients than real-world data (RWD).

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Researchers access the SCD through an interactive Visualizer which allows them to generate tabular and graphical summaries. The SCD includes 1528 mBC patients from 5-10 Phase II & III clinical trials. The SCD is used to generate clinically relevant subgroups for benchmarking efficacy and safety outcomes, insights into disease subsets and correlations between short and long-term endpoints.