

Leveraging AI to predict, analyze and optimize clinical trials

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Background:

Big data along with machine learning and deep learning-based data analytics are being increasingly applied to life science due to the complexity and diversity of the data it produces. This is particularly the case in clinical trials, whose success hinges on diverse and complex design parameters.

Innoplexus AG's Clinical Trial Prediction algorithm leverages AI to crawl, aggregate disparate public data from scientific publications, historical clinical trial designs, chemical / molecular databases. AI based methods are then applied to build hypotheses and subsequent validation by running millions of simulations, learning from past trial results.

The algorithm assesses success probabilities for on-going clinical trials and evaluates risks: whether it is the drug's biological & physiological process or other parameters such as trial design, investigators, sites etc.

Objectives:

The objective of this study is to use AI to analyze the results of two similarly designed Phase 2 trials using the same product in related indications one of which failed whilst the other succeeded and offer parameter optimization to maximize the probability of success for subsequent Phase 3 clinical trials.

Method:

Data from the two Phase 2 trials will be analyzed by an AI algorithm to conduct a retrospective analysis. These data inputs include recruitment related milestones, adverse events, efficacy data and biologic properties of the investigational product.

Results:

We will present:

1. Ability, working of AI algorithm to predict the results observed
2. Parameters that drove the prediction
3. Leveraging these insights, an overview of the parameter settings of Phase 3 trial

This method can be applied universally and help decrease the failure rate of clinical trial