A Novel Way to Optimize Dietary Compliance and Maintenance During SynPheny-1, a Phase 2 PKU Drug Study
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INTRODUCTION

• Dietary intake of phenylalanine (Phe) has a major impact on blood Phe levels in PKU patients.
• Stability in dietary Phe intake is critical in clinical trials for accurate interpretation of an investigational drug’s (IMP) effect.
• Dietary changes while conducting a study can make the interpretation of a drug trial’s results difficult to interpret.
• The current preferred method of using patient reported 3-day diet records is not optimal.
• The FDA published draft recommendations in 2018 for optimizing and standardizing the diet in clinical trials for drug development for inborn errors of metabolism.

OBJECTIVES

• To develop a novel method to help study participants maintain a constant and stable dietary intake of Phe and protein consistent with their usual diet during SynPheny-1, a Phase 2, open-label study of SYNB1618, an investigational Synthetic Biotic medicine for the treatment of PKU [NCT04534842].

METHODS

• Participants consume a stable diet at least 1 month prior to the screening visit. During the screening period participants complete 5-day diet records noting their usual intake.
• The dietitian reviews the records with the participant to clarify information and check for accuracy.
• The diet records are analyzed using MetabolicPro (a web-based nutrient analysis software program designed specifically for use by metabolic dietitians) to determine baseline Phe, protein, and calorie intake.
• Outcome: Participant’s baseline intake for protein and Phe are the goals for the entire study.

• Based upon the baseline goals, the dietitian creates five custom daily menus the participant will select from each day: Menus A, B, C, D, and E, along with menus for the Biomarker and Tracer Days (7 menus total). Daily menus can be repeated, but subjects cannot consume foods from different menus on the same day.
• A list of “free foods” and beverages is created with the participant.
• A grocery list of foods included in the menus is developed to help the participant plan for selected menu.
• Using a template, menus and “free foods” are uploaded into a portal so they will appear in the participant’s app.

• Diet data is uploaded to the portal daily and is accessible by the study sites in real time.
• The dietitian will be in contact with the participant approximately 3 times per week to ensure compliance and to answer any questions.
• After study completion the research dietitian will download the participant’s actual intake from the portal, analyze daily intake in Metabolic Pro and enter results to the study database.

MY STUDY BUDDY APP

• A mobile app was designed to guide daily menu selection and log daily dietary intake.
• The app has various activities designed to help the participant through the study which include access to an individualized selection of daily menus, logging of daily dietary intake, recording IMP dosing details, and recording how they are feeling.

CONCLUSIONS

• This new method follows the FDA’s guidelines by:
  • identifying baseline intake of appropriate biochemical markers (dietary Phe) before study start
  • conducting a diet run-in to help participants adjust to the stable study diet and to reach a stable baseline blood Phe level prior to dosing
  • minimizing variability in dietary factors during study participation by systematically assessing adherence to the dietary plan in real time throughout the study
  • including frequent contact to address issues pertaining to diet management, study drug & dosing, as they arise
• Limitations: This improved method of diet management requires intensive dietitian interactions and may not be well suited for large, international trials.
• The SynPheny-1 study is open for enrollment and our experience with initial study participants will be shared at this meeting.

REFERENCES & FUNDING

• Funding was provided by Synlogic Inc.