DRUG REPURPOSING AS A STRATEGY FOR KLEEFSTRA SYNDROME

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K.I.D.S. IQ PROJECT

Advancing drug development for
Kids with Intellectual Disability Syndromes

Submit Your Questions

To send in questions, please use WebEx's Q&A feature

(located on the right-hand side of your screen, or at the top of your screen if you're in full view mode).

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What We'll Cover Today

- What is Drug Repurposing/Repositioning?
- How do drugs get chosen for repurposing?
- Why do drugs need to be re-tested in a new patient population?
- What is the latest on repurposed/repositioned drugs in testing for KS?
- Q&A session

Today's Webinar Panelists

Braden Root-McCaig (Moderator)

- Executive Director, K.I.D.S. IQ Project

Dr. Paul Smith

- Scientific Director, K.I.D.S. IQ Project

What is Drug Repurposing?

- Testing a therapy approved for one disease for its effect on another
- How we choose a drug for repurposing?
  - Observe trend in people who take the drug
  - Identify disease biology that existing drug addresses
  - Select drugs with likelihood of success (i.e., can get into the brain)
  - Sometimes no selection bias – screen entire FDA library
- What is this different from repositioning?

Why Do We Have to Re-Test Repurposed Drugs?

- We need to make sure the drug works.
- The biology and symptoms of a different disease may impact drug safety.
- The required dose may be different, which could impact safety.
- It may interfere with current treatment regimen.

Applied to Kleefstra syndrome (KS)

- K.I.D.S. IQ Project actively funding a research project looking to screen FDA-approved library
- Also screening drugs/compounds not yet approved by FDA (developed for other diseases/disorders)

Case Studies

- Fronto-Temporal Dementia (FTD)
  - Bluefield project: Identified compound through FDA library screen
- Fibrodysplasia Ossificans Progressiva (FOP) or "stone man's disease"
- ALS screening
- Parkinson's drug for dyskinesia

Bluefield project: Fronto-temporal Dementia (FTD)

Background

- Progressive neurodegenerative disease that causes profound behavioral and personality changes.
- 3 main forms of fronto-temporal dementia: linked to mutations in six genes.
- Progranulin gene mutations result in lowered levels of progranulin protein and this causes nerves in the brain to die.

Approach

- High-throughput screening (HTS) of new drug-like chemicals and FDA approved therapies.

UT Southwestern Medical Center: +230,000 compounds

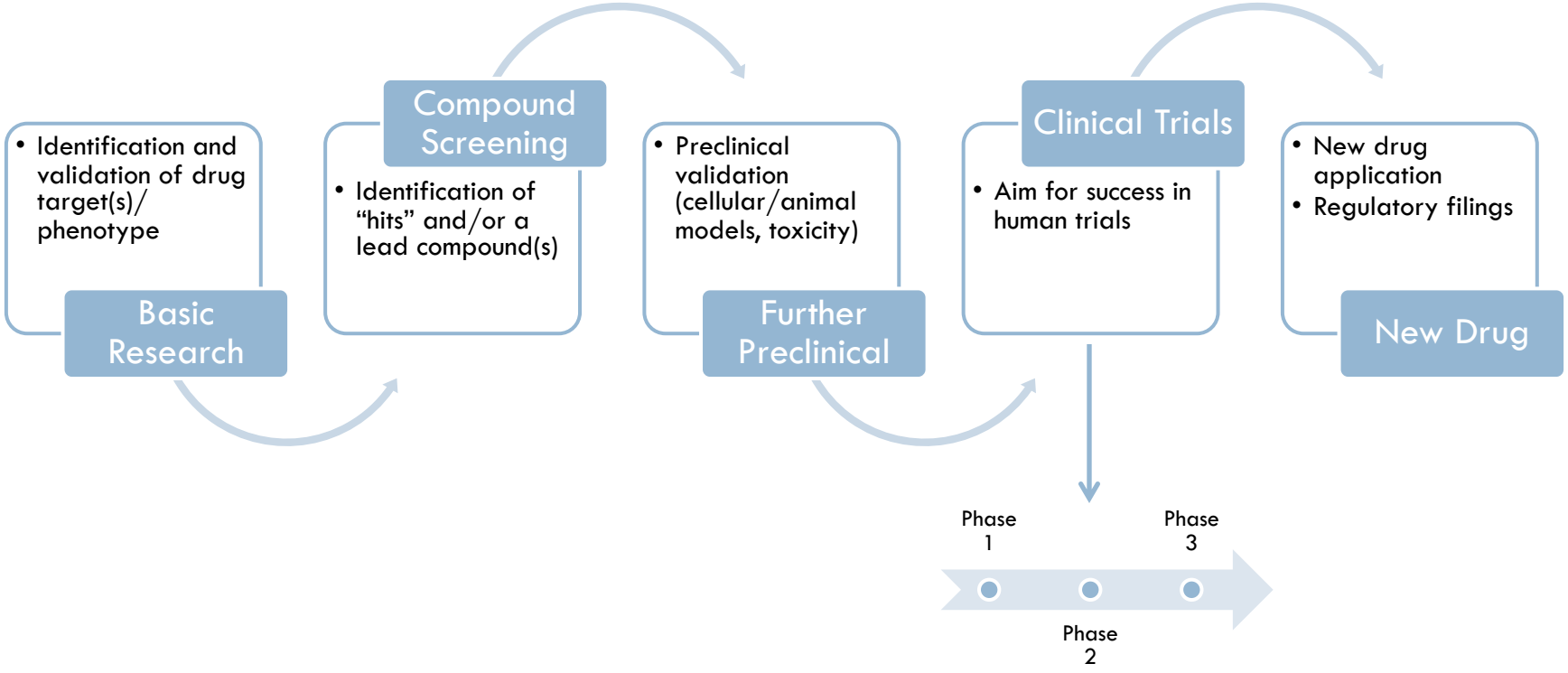
NIH National Center for Advancing Translational Sciences: +590,000 compounds

UCSF: +150,000 compounds

Status

- Identified Nimodipine. Drug approved for treatment of high blood pressure.
- Recently completed a small clinical trial (dose finding and safety).

Impacting the Traditional Timeline



Accelerated timelines are achievable with rare disorders and drugs that are re-purposed/re-positioned

Source: NIH

Key Takeaways

- Drug repurposing & repositioning can point us to potential KS treatments.
- This approach may move drugs into clinical trials faster but still demands rigorous testing to understand impact and safety in KS.
- KS is an orphan indication (rare) and would receive fast-track review (no medicines) which accelerates timelines.
- A family database improves our knowledge of the KS clinical spectrum and organize any future clinical trial faster.

QUESTION & ANSWERS

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Type your questions into the Q&A text box.

Upcoming with K.I.D.S. IQ Project

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Sept 22	• Walk & Roll - Webinar presentation
Oct. Webinar	• KS & Mental Health
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