NBIAcure NEWSLETTER

- APRIL 2018 -

Rare Disease Day 2018

On February 28th, people around the world celebrated Rare Disease Day. Taking place on the last day in February, Rare Disease Day is a celebration, an awareness campaign, and a fundraiser all wrapped into one. Rare Disease Day began in Europe in 2008, and has since expanded to 94 countries! The purpose of Rare Disease Day is to "raise awareness amongst the general public, policy makers, public authorities, industry representatives, researchers, and health professionals about rare diseases and their impact on patients' lives". Approximately 1 in 20 people will live with a rare disease at some point in their life. Despite this, there is no cure for the majority of rare diseases. By raising awareness, the founders of Rare Disease Day hope to attract funding and researchers to rare diseases.

So how did people participate this year? Our team lit up the Morrison Bridge in Portland, Oregon with the NBIAcure colors! Other events around the world included face painting, bowling, marathons, and just about anything else you could think of. You can learn more at rarediseaseday.org.

825 Tubes with patient and healthy control cells frozen at -321 degrees Fahrenheit

15 Patients newly diagnosed with a NBIA disorder who contacted us in the last two months

10 Bags of candy on hand for NBIA patients and their siblings at clinical/research appointments

5 New cell lines grown from skin biopsies since January

6 Fundraisers launched in the last two months for Spoonbill and general NBIA research

Our Publications

SUBMITTED FOR PUBLICATION:

- Autosomal Dominant Mitochondrial Membrane Protein-Associated Neurodegeneration
- A New Case from Turkey with Homozygous C19ORF12 Mutation (Co-authored with collaborators in Turkey)

CURRENTLY IN PROGRESS:

- Mitochondrial Enoyl CoA Reductase Protein-Associated Neurodegeneration (Co-authored with international collaborators)

* *We will provide the full citations for these papers once they are published*

CoA-Z Updates

The two companies testing different methods to produce large batches of CoA-Z are still hard at work. Their work is on schedule and we receive positive updates from them regularly.

In the meantime, we are also hard at work preparing for the CoA-Z clinical trial. As most of you already know, we want to conduct this trial remotely so families won't have to travel all the way to Portland to receive the compound. There will be opportunities coming very soon for you to help us test the logistics of doing a trial like this remotely. Your help will be invaluable in getting the whole PKAN community ready! Be on the look out for an announcement soon!

Reflecting on three years of NBIA natural history studies

Back in April 2015, the very first beta-testers started participating in our online natural history study, PKANready. These early testers helped us work out the bugs and finalize the design before the full launch of the study later that year. We just started beta-testing our newest study, BPANready, and it's been three years since the first participant enrolled in PKANready, so we thought this was the perfect time to reflect on what we've learned, highlight the value of natural history studies and share some interesting statistics from PKANready.

What is a natural history study?

Natural history studies gather data about the natural progression of a disease. By tracking this data and doing statistical analysis, researchers can learn more about how a disease progresses over time. A natural history study can also identify disease markers (symptoms or measurements) which can be used during a clinical trial to determine if a possible therapeutic is actually changing how that disease would typically progress. Without having a baseline to compare to, it's incredibly hard to prove that a possible therapeutic is working.

What type of data is gathered?

- Demographics (age, gender, contact information, etc)
- Milestones (smiling, babbling, crawling, talking, walking, etc)
- Surgeries (g-tube, baclofen pump, DBS)
- Medications (current meds and/or changes in meds)
- Imaging (MRIs, ultrasounds, etc)
- Biomarkers

In order to get the best statistical analysis, this data needs to be gathered consistently over time which is why you may be asked the same questions over and over again.

Why are natural history studies important?

In most cases, the FDA requires that a natural history study be completed prior to approval of a clinical trial for a rare disease. That's why we named these studies PKANready, PLANready and BPANready. We want to be READY to go to clinical trial as soon as a potential therapeutic compound is identified.

Why does it take so long to develop a study?

We want to make sure that we take our time during the design process to ensure that these studies give us data that will actually be helpful moving forward. Our team's expertise in this group of disorders and our extensive repository allow us to determine the data points that would create the most robust natural history study for each NBIA disorder. We have also learned lessons from the experience of each natural history to apply to the next one. BPANready will be launching soon and the design of that study was directly influenced by what we learned from PLANready, which was influenced by what we learned from PKANready. Each online study has helped us better focus on what data is most helpful and what design or format can get us that data.

We want to thank everyone who tested PKANready/PLANready and are currently testing BPANready because your feedback is invaluable. We also want to thank all the individuals and families who have continued participating in PKANready for the past three years. We understand how difficult it can be to find time in your busy lives to complete our questionnaires, but we can confirm that you are doing an invaluable service to the entire NBIA community.

What have we gained from these studies?

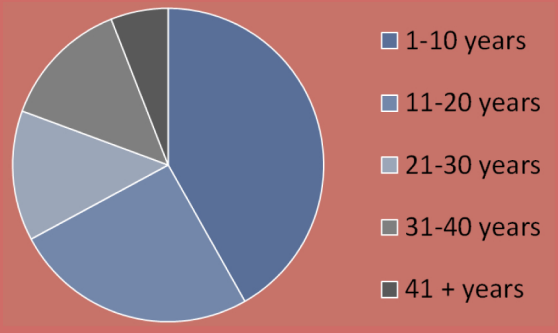
The data gathered over the past three years through PKANready directly impacted the FDA's positive response to CoA-Z and our ability to progress so quickly to clinical trial. It probably doesn't feel quick for all of you, but it absolutely is in comparison to how clinical trials usually progress (especially for rare diseases).

If you want to learn more about PKANready or PLANready, please visit our website at nbiacure.org. We will make an announcement on our website and social media as soon as BPANready launches.

PKANready Statistics

Participants with both classic and atypical PKAN can enroll in PKANready so this study includes individuals ranging from 3 years old to 60 years old. Due to the increased availability of whole exome sequencing, we've seen a dramatic increase in the number of individuals diagnosed before age 10.

Age ranges of PKANready participants



Number of participants from each country

Country of Origin	Number of PKANready Participants
United States	43
Australia	6
India	5
Netherlands	4
Canada	3
United Kingdom	2