Evelyn Koenig, Exec Dir of Narcolepsy Network, which is a patient support network, opened the evening. Round of applause to Keith Harper for his last-minute organizing of this event.

Keith Harper introduced Dr. Mignot.

Dr. Mignot summarized narcolepsy research and his role. He has studied narcolepsy for many years. Discovered one type of narcolepsy—Type 1—which is caused by a lack of hypocretin in the brain. Generally found with cataplexy. Type 2 is less defined problem, similar to idiopathic insomnia, needs more research.

Most of his research focused on Type 1.

About 1 in 2,000 people has Type 1, but most of the general population doesn’t understand or know about narcolepsy or sleep regulation in general.

Dogs get narcolepsy, with cataplexy. Dr. M. joked that he is “the leading expert in the world about canine narcolepsy.” He found that in some dogs, it is not genetic and can happen at any age; other species (goldens??), seems more prevalent. Same problem as in humans, the lack of hypocretin. Dr. M. now adopts dogs with narcolepsy—he has a chihuaha at this time. 😊

Dr. M. found that no hypocretin chemical was being produced in the brain of people with narcolepsy Type 1. Only about 70,000 cells produce this chemical, so relatively small, but essential. Hypocretin exists in the hypothalamus, deep in the brain.

Ideal would be to give hypocretin to people, to replace it in our brains. But we can’t yet deliver hypocretin into the brain. You can inject it but it doesn’t “cross” into the brain, there is a barrier that stops it from getting in there, and you can’t cut a hole in peoples’ heads to inject hypocretin directly. Another problem with injecting hypocretin is that the body might just destroy the cells all over again (see auto-immune notes below). Researchers want to create a chemical that looks like hypocretin but can cross the barrier into the brain. Researchers can do this with mice, it cures them completely. A Japanese doctor [name??], “very very bright guy,” runs a huge lab in Japan, and has succeeded in finding something that can go into the brains of mice and reverse symptoms. This conceptually shows it’s possible. But very early in the pipeline. Drug needs work before it can be given to humans. It’ll be 10 years before this would be available to humans.

Narcolepsy usually acquired in adolescence. Something triggers it, unclear what the trigger is—can be flu in some people.

Why are hypocretin cells not there?? They are neurons, so they don’t reproduce. Cause of cell death: immune system. Narcolepsy is an auto-immune disease. About 5% of humans have auto-immune diseases (MS, lupus, etc.). Narcolepsy similar to Type 1 Diabetes (also auto-immune). Same family of genes—HLA—people with narcolepsy Type 1 have this variant. You need a certain genetic background to get narcolepsy. Body activates an immune response, kills the hypocretin cells. This is why we can’t just
inject hypocretin cells into the brain. The auto-immune system has a very long memory (upwards of 20 years) and would probably reject the new cells. This is one reason why stem cell research, while promising, is also difficult.

In very young children, narcolepsy can happen overnight. Usually, it has a much slower onset, during adolescence. Takes a while for all the hypocretin cells to be destroyed. Even older people can get narcolepsy, Dr. M. told a story about a NYC doctor who got it at age 60.

In 10 years, there should be a simple blood test to diagnose narcolepsy. Also hope to prevent narcolepsy, maybe get rid of the cells that would attack hypocretin.

Narcolepsy without cataplexy—Type 2. Most don’t have vivid dreams, wake up groggy. A researcher (Dr. David ____ at Emory) is looking into the role of a chemical called Gaba, which inhibits the brain. He thinks Type 2 people might have too much gaba, but this hasn’t been verified. Dr. M. seems a bit skeptical of this theory.

“Brain is so complicated.” Dr. Mignot.

Question about macro bio and diet. Dr. M. said the immune system is a holistic system, does more than just fight infection. So yes, look at all things in diet choices. You need to listen to your own body, know what works for you. Specific food choices are very personal. Diet isn’t going to change what has happened—the hypocretin cells are dead, but some food might make you feel better than others.

Question about narcolepsy and obesity. Dr. M. said some people might gain weight because they are less active, and slow down. He is a strong advocate for exercise in people with narcolepsy, also good to have strong muscles to deal with cataplexy. On Xyrem, you lose weight, so exercise good because you can get hungry from exercise and then eat more. There is a relationship between poor sleep and weight gain, not really sure why. PWNs can eat lots of crackers, soda, junk food, raid the fridge. Looking for sugar to stay awake?

“Narcolepsy doesn’t happen in a vacuum.”

It happens to a specific person and you need to look at each person as an individual. Dr. M. tells his students this. He told anecdote about two children he met in China. Identical twins, one had disabling narcolepsy, couldn’t go to school. His identical twin showed no symptoms but tests revealed that he, too, had narcolepsy. Why was one so disabled and the other not? Part of medical mystery, a very small thing in the brain can make diseases go in different directions.

TREATMENTS

*Every medication works differently on every person.*

*Medicine is never 100% a certain way. There are always a few exceptions to everything.*

**Stimulants:** They work. The problem is they prop you awake, but don’t make you “fresh.” They all work with the activation of dopamine. Dr. M. likes slow release better than short-acting, as the slow release is
less addictive. Modafinil (Provigil) is naturally slow-release. Addictive behavior found more with Type 2 narcolepsy than Type 1. Dr. M. uses Strattera for many people, few side effects.

The stimulants put people with narcolepsy at about a 60% performance level compared to “normal” people.

**Anti-depressants:** Represss REM sleep, suppress bad dreams, cataplexy. He uses Effexor, slow release, which is more effective on cataplexy than other drugs. In 80% of his cases, Effexor works. Lexapro doesn’t really work on cataplexy, while Prozac does. Downside of these drugs is that stopping them is “hell.”

**Xyrem:** Has revolutionized the treatment for narcolepsy. Can make you feel almost normal, about 90% of what would be expected without narcolepsy. PWNs can wake up a lot during the night, even for 2.5 minutes. Xyrem makes them sleep very well at night. People lose weight on Xyrem, it cuts appetite, makes you nauseous. Ideal PWN for Xyrem is an overweight person! Some people can lose too much weight. They can also lose weight because finally on Xyrem, they feel better, become more active, do more.

Xyrem can make people more anxious, or more depressed. Add on an SSRI, very good combo.

Xyrem is a very old drug, and pretty easy to synthesize. In the 1970s, it was discovered that it was helpful for people with narcolepsy. People actually made it themselves. If people take it carefully and the way you are supposed to (only at night, not during the day), no addiction issues.

Vomiting a real side effect. Also weight loss, occasional psychiatric issues.

There is a real art to prescribing Xyrem. A doctor must titrate Xyrem to each patient. There are all kinds of tricks with Xyrem.

The effect of Xyrem gets better and better the longer you take it.

**Question about cataplexy.** In general, if you have it, it’s pretty clear. For some reason, it’s not always as obvious in African-Americans. Xyrem can resolve cataplexy over the years. Especially with abrupt onset, it often eventually goes away.

**Question about Modafinil/Provigil and memory loss.** Dr. M. feels that “PWN patients can’t concentrate very well, it’s not the drugs. If anything, it is undertreated narcolepsy.”

**Question about naps.** If people could nap every 3 hours, would probably be doing OK without meds.

“Not napping” if you have narcolepsy is criminal!!! Schedule a nap. One brief nap after lunch is best.

*PWNs more often undertreated, not over treated. There is no reason not to try different drugs if you are not doing well.*