What Is Rett Syndrome?

Rett syndrome is a rare genetic neurodevelopmental disorder that occurs **primarily in females** following a near normal development in the first 2 years of life. Patients then experience a period of **developmental regression between 18-30 months** of age, which is typically followed by a plateau period lasting years to decades.[1,2]

Prevalence and Symptoms

Rett syndrome is a complex, multisystem neurodevelopmental disorder that includes a period of normal development followed by developmental regression with loss of language and hand function skills, impaired gait and development of hand stereotypes.[1,2] Individuals may also experience a range of symptoms associated with it, including gastrointestinal complications, skeletal abnormalities and neuroendocrine abnormalities.[3-6] Symptoms may also include disruptive and anxiety-like behaviors as well as mood dysregulation and sleep disturbances.[7]

Rett syndrome occurs worldwide in approximately **one of every 10,000 to 15,000 female births.**[8]

Rett syndrome causes profound impairment to **central nervous system (CNS)** function, including loss of communication skills, purposeful hand use, gait abnormalities, and stereotypic hand movements such as hand wringing/squeezing, clapping/tapping, mouthing and washing/rubbing automatisms.[2]

Individuals with Rett syndrome display **eye contact and fixation on people**, which suggests a desire or intent to communicate that is hindered by the severe apraxia and movement disorder, leading to a degree of isolation.[8,9]

Unmet Need in Rett Syndrome

Rett syndrome is diagnosed based on clinical evaluation, **typically by about three years of age**.[2,10] Analysis of 819 individuals with Rett syndrome enrolled in the Natural History Study revealed that MECP2 mutations caused the majority (95.0% of typical and 73.2% of atypical) of Rett syndrome cases.[11]

Individuals with Rett syndrome may **require continuous care** to address an array of symptoms that may result in unexpected behaviors and situations.[12]

Currently, there are **no approved medications for the treatment of Rett syndrome**.[13] Symptom management of comorbidities requires a multidisciplinary approach coordinated by a pediatrician and focusing on the management of symptoms to allow for a better quality of life and potentially a longer lifespan for patients with Rett syndrome.[14]

Acadia's History in Rett Syndrome

2018 Acadia and Neuren Pharmaceuticals strike North American **executive licensing deal for trofinetide**.

2019 **Positive Phase 2 study results** of trofinetide in pediatric Rett syndrome published in *Neurology.*

2020 Acadia and Neuren announce **rare pediatric disease designation** for trofinetide for the treatment of Rett syndrome.

2021 Acadia announces positive top-line results from pivotal **Phase 3 trial of trofinetide in Rett syndrome**.

2022 Acadia and Stoke Therapeutics collaborate to pursue **RNA-based treatments** for severe and rare genetic neurodevelopmental diseases.

Trofinetide is an investigational agent, and its safety and efficacy have not been established or approved by the FDA.

Acadia's Commitment to People Impacted by Rare Diseases

For more than 25 years, Acadia has taken on the toughest challenges in the CNS space, working at the forefront of healthcare to get vital solutions to patients and the people who care for them. At Acadia, expanding our work in rare disease is a compelling next step in our mission to bring meaningful treatment options to those who may not have many.

Many of us at Acadia have first-hand experience with loved ones who have rare diseases and disorders. To us, patients aren't just patients. They're people we admire and people we fight for.

Acadia is committed to not only providing treatment options but also battling widespread stigma through disease education and by supporting policies that improve diagnosis and treatment. **We're excited to bring this commitment to the rare disease community to help improve understanding and find solutions for these conditions**.

Acadia has formed strong connections in the Rett syndrome community, partnering with the International Rett Syndrome Foundation and Child Neurology Foundation, supporting community events to improve awareness and understanding of Rett syndrome and establishing the Rett Parents Council to listen and learn directly from those who know Rett syndrome best – parents.

Sources

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