

GELASTIC SPELLS IN ANGELMAN SYNDROME, WHEN LAUGHTER ISN'T FUNNY

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Build Your Understanding

Gelastic Syncope: When excessive laughter causes a drop in heart rate and blood pressure, leading to fainting.

Angelman Perspective: this usually is a sudden loss of consciousness because the laughter increases pressure in the chest that leads to less blood reaching the heart to be sent to the brain; the low blood pressure causes the fainting.

Gelastic Spells: Laughter-related episodes that can cause fainting, muscle weakness, or seizures.

Angelman Perspective: this usually manifests as sudden, uncontrollable laughter- this article delineates that despite common misperception, the seizures usually cause the laughter rather than the other way around.

Cataplexy: Sudden muscle weakness triggered by emotions like laughter, but without loss of consciousness.

Angelman Perspective: this usually manifests with retained awareness in the individual. There can also be some facial movements. Notably, this is associated with strong emotions rather than the intensity of the laughing itself.

Who & What?

These doctors are seeking to understand why some children with Angelman Syndrome collapse or pass out while laughing. It explains the differences between seizures, fainting, and muscle weakness and offers guidance on managing these episodes. Recognizing the right cause is important for treatment.

How?

The researchers studied three people with AS who had laughter-related spells. They reviewed their medical histories, test results (brain scans, heart tests, lab work), and video recordings to determine what was causing these episodes.

Why This Matters:

- Some of these laughter spells are caused by fainting, not seizures.
- If doctors misdiagnose fainting for seizures, the wrong medications could be used, which could actually make things worse.
- Parents and doctors can work together to figure out the triggers (like overstimulation or certain medications) and find better ways to prevent these episodes.

"Melatonin, used nearly universally in the AS population, has been shown to have blood pressure-lowering effects, which in the context of polypharmacy, could increase the risk for syncope."

The researchers emphasize that parents and doctors are a team that need to work together to lead to the proper diagnoses for these children. A few ways they suggest to do this is for parents to try to capture the episodes of their kids on video. This would help to remove subjective characterizations of the episodes and allow them to determine etiology more specifically. Some specific things to look out for include if the person changes color, loses muscle tone, loses awareness or consciousness, and if the parent can feel the radial pulses at the wrists during these episodes.

The aforementioned symptoms each help to rule in or rule out the different possible diagnoses doctors would consider for the episodes, and allow the correct treatments to be given without delay. These treatments can include things like anti-seizure medications, dietary modifications if it's syncope based, anticholinergics, beta-blockers, tricyclic antidepressants, and selective serotonin reuptake inhibitors. All that to say, each treatment would be tailored to the etiology of the episodes.

Summarized Research Article:

Varughese, N., Horn, F., & Carson, R. P. (2025). Gelastic spells in Angelman syndrome, when laughter isn't funny. *Epilepsy & Behavior Reports*, 29, 100751. "[Genethon and Eukarys Announce a Strategic Partnership to Develop a Breakthrough Technology to Reduce the Biomanufacturing Cost of Gene Therapies](https://www.biospace.com/press-releases/genethon-and-eukarys-announce-a-strategic-partnership-to-develop-a-breakthrough-technology-to-reduce-the-biomanufacturing-cost-of-gene-therapies)." *BioSpace*. <https://www.biospace.com/press-releases/genethon-and-eukarys-announce-a-strategic-partnership-to-develop-a-breakthrough-technology-to-reduce-the-biomanufacturing-cost-of-gene-therapies>.