

# Epilepsia<sup>®</sup>

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## BRIEF COMMUNICATIONS

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### **Obstructive apnea due to laryngospasm links ictal to postictal events in SUDEP cases and offers practical biomarkers for review of past cases and prevention of new ones**

Mark Stewart, Richard Kollmar, Ko Nakase, Joshua Silverman, Krishnamurthi Sundaram, Rena Orman, and Jason Lazar

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Seizure spread into autonomic and respiratory brainstem regions may contribute to sudden unexpected death in epilepsy (SUDEP). Evidence points to postictal apnea, bradycardia, and asystole as critical events that can lead to death. One possible link between ictal and postictal events is seizure-driven laryngospasm sufficient to completely obstruct the airway for an extended period. We demonstrate in a rat model how the electrical artifacts of attempts to inspire during airway obstruction and features of the cardiac rhythm establish this link between ictal and postictal activity and can be used as practical biomarkers of obstructive apnea.

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### **Reduced steroidogenesis in patients with PCDH19-female limited epilepsy**

Marina Trivisano, Chiara Lucchi, Cecilia Rustichelli, Alessandra Terracciano, Raffaella Cusmai, Grazia Maria Ubertini, Germana Giannone, Enrico Silvio Bertini, Federico Vigevano, Jozef Gecz, Giuseppe Biagini, and Nicola Specchio

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Allopregnanolone has been recently found to be reduced in patients affected by protocadherin 19 (PCDH19)-female limited epilepsy (PCDH19-FE). To further evaluate the role of neuroactive steroids in this type of epilepsy, we investigated the changes of allopregnanolone, pregnanolone, pregnenolone sulfate and other steroids in response to administration of adrenocorticotrophic hormone (ACTH). Almost all the evaluated steroids were reduced in blood of PCDH19-FE girls already in basal condition. Neuroactive steroid levels increased in response to ACTH, but not enough to reach control levels. These results suggest the presence of multiple defects in steroidogenesis in PCDH19-FE, which could represent novel therapeutic targets.

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