Exploring the cause of sudden unexplained death in epilepsy

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Dravet syndrome (DS) is a form of infantile-onset, treatment-resistant epilepsy that is caused by a mutation in the gene encoding a voltage-gated sodium channel, SCN1A. DS patients have a 30-fold increased risk of dying from sudden unexplained death in epilepsy (SUDEP) compared to patients with other forms of pediatric-onset epilepsy.

In this issue of the *Journal of Clinical Investigation*, Franck Kalume and colleagues at the University of Washington characterized SUDEP in a mouse model of DS. Observation using video, electroencephalography, and electrocardiography revealed that a prolonged slowing of the heart beat preceded SUDEP in mice. Treatment with with drugs that reduce activity in the parasympathetic nervous system reduced the incidence of SUDEP, suggesting that mortality results from seizure-related parasympathetic hyperactivity.

In a companion Attending Physician, Orrin Devinsky and colleagues discuss how these results could relate to SUDEP in human DS patients.

More information: Sudden unexpected death in a mouse model of Dravet Syndrome, J Clin Invest. doi:10.1172/JCI66220
Sudden death in epilepsy: Of mice and men, J Clin Invest. 2013;123(4):1415–1416. doi:10.1172/JCI67759

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