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Study Reveals Possible Cause for Some Unexplained Deaths in Children

June 2007, A new study is causing experts to take a closer look at febrile seizures and whether they might play an important role in the inexplicable deaths of some children.

"This is the first potential breakthrough we've had in finding a possible cause for SUDC (Sudden Unexplained Death in Childhood)," said Laura Crandall, an SUDC parent who is co-founder and program co-director for The SUDC Program. "We hope it leads to an understanding of why some children die inexplicably so that we can save lives. That is exciting."

Often unheard of, SUDC is the inexplicable death of a child after the age of one year. Rare, it affects one in every 100,000 toddler- aged children. In contrast, Sudden Infant Death Syndrome (SIDS), which occurs before the first birthday, is 55 times more common.

The study, recently published in *Pediatric and Developmental Pathology*, looked at five cases of SUDC in toddlers who died in their sleep. Four of the children either had a history of febrile seizures or a history of febrile seizures in their families.

Doctors discovered that in each case, the hippocampus was abnormal. "The long-held assumption that febrile seizures are benign may need to be re-evaluated in light of these new findings," Crandall said.

Dr. Hannah Kinney, of Harvard Medical School and the study's lead pediatric neuropathologist who studied the brain tissue of these children said, "We hypothesize that the hippocampal anomalies represent an undiagnosed epileptogenetic focus that triggers an unwitnessed, sleep-related seizure; cardiopulmonary arrest; and sudden death."

"While this is an exciting finding for SUDC, I want to stress that it is a preliminary finding," Kinney said, adding that parents shouldn't panic and pointing out that SUDC is extremely rare.

The study is particularly meaningful because it follows a 2005 paper showing that 32 percent of the first 34 SUDC cases studied involved children who had a seizure with 73 percent of them being febrile seizures, said Dr. Henry Krous, director of the San Diego SIDS/SUDC research project and director of pathology at Rady Children's Hospital in San Diego.

"To further study this area with a larger dataset will be crucial to confirm these findings and gain a further understanding of some deaths due to SUDC," said Krous, who has taken the lead in studying SUDC. "In follow-up to our identification of heretofore unrecognized abnormalities in a subset of the SUDC, we are trying to determine the implication of these findings on subsequently born siblings."

"Further studies need to be done to confirm the preliminary findings," said Crandall. "We need to keep pursuing this. If there is some way that we can screen for this, we have a treatment that seems feasible. It could be as straightforward as putting a child on epilepsy medication during a critical period to prevent future febrile seizures."

Much work remains to be done. "With such rare types of tragedies, it is crucially important to bring as much information about all of these children together so that we can finally unravel its mystery," Krous said.

The CJ Foundation for SIDS established The SUDC Program in 2001 to provide support to affected families, raise awareness of this little-known tragedy and fund research to uncover the causes and ultimately the prevention of SUDC. "The goal is to create a future free of SUDC for all children and their families," Crandall said. For more information, visit www.sudc.org or call 800-620-SUDC.

The CJ Foundation for SIDS is a national nonprofit organization dedicated to supporting the special needs of the SIDS and SUDC communities through funding SIDS/SUDC research, support services and public awareness programs. For more information on the CJ Foundation, visit: www.CJSIDS.com.