New Insights on the Neurobiology of Dying

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A new Annals of Neurology study provides insight into the neurobiology of dying. For the study, investigators performed continuous patient monitoring following Do Not Resuscitate - Comfort Care orders in patients with devastating brain injury to investigate the mechanisms and timing of events in the brain and the circulation during the dying process.

The findings may be helpful for developing treatment strategies of cardiac arrest and stroke that may complement efforts to reestablish circulation, and also inform the debate of organ donation after cardio-circulatory death, where death is declared between two and ten minutes following the cessation of circulatory function.

“After circulatory arrest, spreading depolarization marks the loss of stored electrochemical energy in brain cells and the onset of toxic processes that eventually lead to death. Importantly, it is reversible – up to a point – when the circulation is restored,” said lead author Dr. Jens Dreier, of Universitätsmedizin Berlin, in Germany.

“There are no direct implications for patient care today. Particular challenges include the slowness of this wave that hampers its visibility in normal EEG recordings; however, this discovery may lead to improved diagnostic and treatment procedures in the future, following Max Planck’s motto that ‘insight must precede application’.”

Additional Information


About the Journal

Annals of Neurology publishes articles of broad interest with potential for high impact in understanding the mechanisms and treatment of diseases of the human nervous system. The journal is published by Wiley on behalf of the American Neurological Association and the Child Neurology Society. For more information, please visit the journal home page at http://wileyonlinelibrary.com/journal/ana.

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