



SDSVD \\ SPREADING DEPOLARIZATION IN SMALL VESSEL DISEASE.

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There are presently no neuroprotective drugs with efficacy to improve outcomes after lacunar stroke. Fundamental challenges to advancing treatment of lacunar stroke are its heterogeneity in terms of cause, pathology, and the lack of mechanistic endpoints in clinical studies. Mechanistic endpoints, necessary for appropriate targeting of treatment, have been lacking due to our limited ability to validate and monitor relevant pathologic processes in clinical populations. Nonetheless, understanding mechanisms contributing to neuronal and vascular disruption and developing mechanistic endpoints on the basis of this understanding holds great promise to unravel the heterogeneity of lacunar stroke, assign treatments appropriately, and detect significant treatment effects when they exist. Spreading depolarizations are a pathology of cerebral gray matter that originate spontaneously in injury foci where they seem to facilitate cellular damage. Whether or not they are deleterious seems to be intimately linked to the composition of the brain extracellular microenvironment and to the level of brain perfusion. In our project “spreading depolarization in small vessel disease” (SDSVD), we will investigate the role of spreading depolarizations in an animal model for small vessel disease. This will provide the basis to develop spreading depolarizations as a mechanistic endpoint for clinical studies of lacunar stroke.



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