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Arteriovenous malformations: an update on models and therapeutic targets

Arteriovenous malformations (AVMs) are an anomaly of the vascular system where feeding arteries are directly connected to the venous drainage network. While AVMs can arise anywhere in the body and have been described in most tissues, brain AVMs are of significant concern because of the risk of haemorrhage which carries significant morbidity and mortality. The prevalence of AVMs and the mechanisms underlying their formation are not well understood. For this reason, patients who undergo treatment for symptomatic AVM's remain at increased risk of subsequent bleeds and adverse outcomes. The cerebrovascular network is delicate and novel animal models continue to provide insight into its dynamics in the context of AVM. As the molecular players in the formation of familial and sporadic AVMs are better understood, novel therapeutic approaches have been developed to mitigate their associated risks. Here we discuss the current literature surrounding AVM including the development of models and therapeutic targets which are currently being investigated.

Recent Publications

1. Turner, R.C., Lucke-Wold, B.P., Tan, Z., Rosen, C.L., Huber, J.D. (2012) Modulation of Protein Kinase C Isoforms: a Potential Therapeutic for Ischemic Stroke? *Ischemic Stroke: Symptoms, Prevention and Recovery*. Nova Publishers. 171-190.
2. Lucke-Wold, B.P., Logsdon, A.F., Turner, R.C., Rosen, C.L., Huber, J.D. (2014) Aging, the Metabolic Syndrome, and Ischemic Stroke: Redefining the Approach for Studying the Blood Brain Barrier in a Complex Neurological Disease. *Pharmacology and the Blood Brain Barrier: Targeting CNS Disorders*. *Advances in Pharmacology*. 71:411-49.
3. Nguyen, L., Lucke-Wold, B.P., Mookerjee, S., Kaushal, N., Matsumoto, R.R. (2016) Sigma-1 receptors and neurodegenerative diseases: Towards a hypothesis of sigma-1 receptors as amplifiers of neurodegeneration and neuroprotection. *Advances in Experimental Medicine and Biology*. Springer. 133-152

Biography

Brandon Lucke-Wold was born and raised in Colorado Springs, CO. He graduated magna cum laude with a BS in Neuroscience and distinction in honors from Baylor University. He completed his MD/PhD, Master's in Clinical and Translational Research, and the Global Health Track at West Virginia University School of Medicine.

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