

Pathophysiology of reversible cerebral vasoconstriction syndrome

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Reversible cerebral vasoconstriction syndrome (RCVS) is a complex neurovascular disorder being recognized during the past two decades. It is characterized by multiple abrupt severe headaches and widespread cerebral vasoconstrictions, with potential complications such as ischemic stroke, convexity subarachnoid hemorrhage, intracerebral hemorrhage and posterior reversible encephalopathy syndrome. The clinical features, imaging findings, and dynamic disease course have been delineated. However, the pathophysiology of RCVS remains elusive. Recent studies have had substantial progress in elucidating its pathogenesis. between ROS production and scavenging through multiple mechanisms.

Introduction: Reversible cerebral vasoconstriction syndrome (RCVS) is a complex neurovascular syndrome characterized by multiple abrupt, severe headaches, namely thunderclap headaches, and diffuse segmental constriction of cerebral arteries. The term RCVS was proposed as a unifying nomenclature in 2007 for varieties of historical labeling's such as Call–Fleming syndrome thunderclap headache with reversible vasospasm benign angiopathy of the central nervous system (CNS) postpartum angiopathy [8, 9], migrainous vasospasm or migraine angiitis or drug-induced cerebral arteritis or angiopathy depending on whether patients present to specialists in stroke, headache, rheumatology, or obstetrics, etc. Research on this distinct syndrome has accumulated rapidly in an exponential way after the term RCVS being proposed. The clinical features of RCVS have been well delineated; however, the pathogenesis of RCVS remains elusive. Nevertheless, there is substantial breakthrough in understanding the pathogenesis of RCVS during the past few years. In this review, we will briefly outline the clinical features, significance and impact of RCVS and elaborate in detail what has been known on its pathogenic mechanism.

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