

Mechanism of blood brain barrier damage in the pathogenesis of cerebral small vessel disease

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Abstract

Cerebral small vessel disease(CSVD) is the most common cause of vascular cognitive impairment, affecting all levels of the cerebral vascular system. It mainly affects the structure and function of arterioles and capillaries, resulting in the decrease of cerebral perfusion. Due to the aging of the population, the incidence of CSVD is increasing, but the root cause of CSVD is not completely clear. Magnetic resonance imaging confirmed that the destruction of blood-brain barrier (BBB) is an important feature of CSVD. In physiological state, the main function of BBB is to establish a controlled environment to maintain relatively constant levels of hormones and nutrients in the brain. At the same time, BBB can also block or defend against the invasion of brain toxins or pathogens that may be caused by circulation, so BBB is an important anatomical and biochemical barrier of the central nervous system. This review focuses on the main role and potential mechanism of tight junction (TJ) of BBB in cerebral microvascular disease.

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