Association with blood cholesterol and cerebral aneurysm.

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[Introduction] Subarachnoid hemorrhage (SAH) is a life-threatening and can be frequently caused by a ruptured aneurysm of cerebrovascular blood vessels. Although one third of patients will survive with good recovery; one-third will survive with a disability; and one-third will die. It is well accepted that lowering blood cholesterol level is mandatory in prevention of cerebral circulatory disorder. However, the relationship between cholesterol and cerebral aneurysm is still controversial. In this study, we elucidate the above relationship by established aneurysm model in LDL receptor and Apobec 1 double knock out mice ($L^{-/-}$, $A^{-/-}$) and control mice.

[Method] Hashimoto model of animal cerebral aneurysms was performed. Briefly, left kidney was excised one week before the experiment. Elastase was administered to the subarachnoid space to damage cerebral artery and sustained-release deoxycorticosterone was placed subcutaneously. Drinking water was substituted with 1% salt solution. Three weeks later, the brain tissue was harvested for evaluation of cerebral aneurysm and subarachnoid hemorrhage.

[Results and conclusion] Lesser amount of cerebral aneurysm and subarachnoid hemorrhage were detected in $L^{-/-}$, $A^{-/-}$ mice compared to control mice. It is still needed to clarify whether the blood cholesterol is directly related to rupture of cerebral artery or through enhancement of blood coagulation system.