Puerarin is an effective agent for the prophylaxis and treatment of the cerebral vasospasm (CVS) in patients after aSAH. Moreover, it can improve the prognosis. The mechanism might be correlated with improving the levels of the vascular active factors, i.e., increasing the plasma levels of NO and PGI2, decreasing TXA, in plasma, increasing the cerebral blood flow, and improving cerebral perfusion [1].

Puerarin has been widely used in clinical treatment and experiment research and is considered to exert an anticancer effect recently.

A study investigated the anticancer activity of puerarin in U251 and U87 human glioblastoma cells. The cells were treated with puerarin at various concentrations for different times. Cell viability and cell proliferation were detected by cell counting kit-8 (CCK-8) assay and 5-ethynyl-2'-deoxyuridine (EdU) staining respectively. Cell cycle and apoptosis were measured separately with PI staining and Annexin V-FITC/PI double staining method by flow cytometry. DNA damage of glioblastoma cells caused by puerarin exposure was evaluated by γ-H2AX foci detection, and the expressions of p-AKT, caspase-3 and apoptosis-related proteins were detected by Western blotting after puerarin treatment. Cell viability and proliferation of glioblastoma cells treated with puerarin were significantly lower than that of the control group; the apoptosis rate increased obviously compared to the control group. Puerarin significantly decreased the proportion at G1 phase of cell cycling accompanied by increased populations at the S and G2/M phases in both cell lines. At the same time, DNA damage level of puerarin treated cells was significantly higher than that in the control cells. Moreover, puerarin treatment suppressed the expression of p-Akt and Bcl-2 and promoted the expression of Bax and cleaved caspase-3 in U251 cells. These findings indicate that puerarin exerts antitumor effects both in U251 and U87 cells [2].

Puerarin exerts an anti-inflammatory protective effect on brain tissue with ischemia/reperfusion damage by downregulating the expression of multiple inflammatory factors [3].

Puerarin is protective on the vascular dementia by reducing oxidative stress and improving learning and memory functions. On the molecular level, Nrf2, FoxO1, FoxO3 and FoxO4 were up regulated by puerarin [4].

1)
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