

Objective: To explore the imaging features of tumefactive demyelinating lesions (TDL) and Glioma.

Methods: The brain MRI and ^1H -MRS features in 60 TDLs and 65 Glioma (all patients pathologically diagnosed) were studied.

Results: (1) The occipital lobes were more rarely involved in Glioma than TDL. The mid line structures were involved in Glioma more frequently than in TDL (ratio of 44.6% in Glioma vs 5.0% in TDL). (2) The lesions of TDL exhibited appearances termed diffusely infiltrating ($n = 31$), ring-like ($n = 24$), Balolike ($n = 11$), megacystic ($n = 2$). (3) On $T_2\text{WI}$ the typical characteristics of TDL looked like cloud ($n = 23$), round with hypointense rim ($n = 19$). (4) The tissue necrosis were more frequently found in the lesions of Glioma than TDL, especially for higher grade Glioma. (5) On enhanced $T_1\text{WI}$:21 of 44 Glioma in mass like enhancement, 14 in ring-shaped enhancement. (6) The features on DWI were as follows: in Glioma group, 33 of 65 showing high signal, 8 with low and 17 with mixed;58 TDLs appeared hyperintense in acute and subacute. (7) 19 of 65 Glioma showed mass effect on MRA, but none of TDL. (8) Most of the patients of the 2 groups showed NAA and increased Cho on MR spectroscopy, but the ratio of Cho/NAA in the Glioma group was far more than 2, and the increased $\beta,\gamma\text{-Glx}$ was most frequently found in TDL.

Conclusions: Many characteristics of MRI imagings distinguish Glioma from TDLs, such as the mass effect, intralesional necrosis and sign of swelled callosum for Glioma, the increased $\beta,\gamma\text{-Glx}$ of MRS, open-ring enhanced sign and the dilated venular structure for TDL.

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Demyelinating Disorders 1

The suppression of experimental autoimmune encephalomyelitis by intraperitoneal administration of HuangQi Glycoprotein

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Background: HuangQi Glycoprotein (HQGP) is a kind of natural plant glycoprotein derived from *Astragalus membranaceus*. In vitro experiments showed that HQGP can inhibit lymphocyte proliferation and immune responses and HuangQi has been applied in the treatment of multiple sclerosis (MS).

Objective: To explore the therapeutic potential of HQGP in the experimental autoimmune encephalomyelitis (EAE), and elucidate its possible mechanism.

Material and methods: Mouse EAE was induced by MOG_{35–55} immunization and treated intraperitoneally with HQGP once every day from day 3 post-immunization (p.i.) to day 27p.i. Mice that received the same volume of saline served as untreated EAE controls. The study was approved by the Ethics Committee of Shanxi University of Traditional Chinese Medicine.

Results: The administration of HQGP delayed the onset of EAE, attenuated the clinical symptoms and inhibited inflammatory infiltration into the CNS. HQGP can inhibit the proliferation of mononuclear cells, suppress the secretion of TNF- α , IL-6, NO and promote the secretion of IFN- γ . The results further demonstrated that HQGP treatment effectively induced CD4⁺CD25⁺ T cell, CD4⁺IL-10⁺ T cell and CD4⁺IFN- γ ⁺ T cell.

Conclusions: The administration of HQGP exhibits therapeutic effect on the development of EAE and significantly reduces the inflammatory foci of CNS, possibly through regulating reactive T-cell homeostasis, suppressing the secretion of inflammatory cytokines and inhibiting neuroinflammation in the CNS. (Grant: National Natural Science Foundation of China, 81473577; Shanxi Scholarship Council of China, 2014-00023; The 2011 Cultivation Project of Shanxi University of Traditional Chinese Medicine, 2011PY-1).

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