Cognitive impairment classification

Mild Cognitive impairment

Mild cognitive impairment.

Cognitive functioning in Parkinson's disease

Cognitive functioning in Parkinson's disease

Cognitive disorder after traumatic brain injury

see Cognitive disorder after traumatic brain injury.

Diabetes-associated cognitive decline

Targeting the PPARγ might be a potential therapeutic strategy for diabetes-associated cognitive decline (DACD). In this study, Gypenoside LXXV (GP-75), a dammarane-type triterpene compound isolated from Gynostemma pentaphyllum, was found to be a novel PPARγ agonist using a dual-luciferase reporter assay system. However, whether GP-75 has protective effects against DACD remains unknown. Interestingly, intragastric administration of GP-75 (40 mg/kg/day) for 12 weeks significantly attenuated the cognitive deficit in db/db mice. GP-75 treatment significantly improved the glucose tolerance and lipid metabolism, and suppressed neuroinflammation. Notably, GP-75 treatment dramatically increased the uptake of glucose by the brain, as detected by 18 F-FDG PET. Incubation of primary cortical neurons with GP-75 significantly increased 2-deoxyglucose uptake. In addition, GP-75 treatment markedly increased the p-Akt (Ser 473)/total Akt levels and the expression levels of PPARγ and GLUT4, while decreasing the levels of p-IRS-1 (Ser 616)/total IRS-1. Importantly, all of these protective effects mediated by GP-75 were abolished by cotreatment with the PPARγ antagonist, GW9662. However, GP-75-mediated PPARγ upregulation was not affected by coincubation with the phosphatidylinositol 3-kinase inhibitor, LY294002. Collectively, GP-75 might be a novel PPARγ agonist that ameliorates cognitive deficit by enhancing brain glucose uptake via the activation of Akt/GLUT4 signaling in db/db mice [1)].

Vascular cognitive impairment

Vascular cognitive impairment

Cognitive disorder after subarachnoid hemorrhage

see Cognitive disorder after subarachnoid hemorrhage.

COVID-19 Pandemic related functional cognitive disorder

COVID-19 is associated with an increased risk of long-term cognitive decline in the elderly population. COVID-19 patients, especially severe patients, should be intensively monitored for post-infection cognitive decline [2) 3)]

1)
Meng X, Zhang Y, Li Z, Hu J, Zhang D, Cao W, Li M, Ma G, Wang S, Cui P, Cai Q, Huang G. A novel natural PPARγ agonist, Gypenoside LXXV, ameliorates cognitive deficits by enhancing brain glucose uptake via the activation of Akt/GLUT4 signaling in db/db mice. Phytother Res. 2022 Feb 22. doi: 10.1002/ptr.7413. Epub ahead of print. PMID: 35192202.
2)
Liu YH, Wang YR, Wang QH, Chen Y, Chen X, Li Y, Cen Y, Xu C, Hu T, Liu XD, Yang LL, Li SJ, Liu XF, Liu CM, Zhu J, Li W, Zhang LL, Liu J, Wang YJ. Post-infection cognitive impairments in a cohort of elderly patients with COVID-19. Mol Neurodegener. 2021 Jul 19;16(1):48. doi: 10.1186/s13024-021-00469-w. PMID: 34281568; PMCID: PMC8287105.
3)
Nesrine R, Pedro RN, Alain B. To the editor: Response to post-infection cognitive impairments in a cohort of elderly patients with COVID-19, by Wang, Y.J. et al. (2021). Mol Neurodegener. 2022 Sep 25;17(1):63. doi: 10.1186/s13024-022-00567-3. PMID: 36153624.