

Changing the game for treating Parkinson's disease dementia

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Ceftriaxone (CEF) has long been used as anti-biotic and has recently been shown to increase expression of glutamate transporter-1. Glutamatergic hyper-activity is involved in neuronal loss in Parkinson's disease (PD). By treating PD rats with CEF, we demonstrated that CEF improve motor and cognitive functions. In addition, our histological, electrical, and MRI data showed that CEF increases neuronal density and activity in the hippocampus and dopaminergic system. Interestingly, elevation of neurogenesis in the above areas was also observed. Moreover, receiving CEF treatment, PD patient earned motor, emotion, cognitive, and neuronal benefits. Except dopamine agonist, for example, L-dopa, treatment effect being not satisfied, there is lack of medicine for treating PD. Our data support that CEF may has potential for effectively treating dementia in PD. Keywords: Parkinson's disease, dementia, glutamate