

26th European Neurology Congress

August 06-08, 2018 | Madrid, Spain

Disconnections of cortico-subcortical pathways related to cognitive impairment in patients with leukoaraiosis: A preliminary diffusion tensor imaging study

Jun Liang Yuan

Beijing Chaoyang Hospital - Capital Medical University, China

Background: We aimed to explore the relation between the microstructural integrity of white matter using the technique of diffusion tensor imaging (DTI) and changes of cognition in leukoaraiosis (LA).

Methods: Fifty patients with LA and 50 age- and gender-matched controls were recruited consecutively. The average values of mean diffusivity (MD) and fractional anisotropy (FA) were quantified both within white matter lesions (WMLs) and normal-appearing white matter (NAWM) from the regions of interest (ROIs).

Results: We found significantly decreased FA and increased MD in WMLs at the 5 ROIs than that in NAWM and controls ($p < 0.05$). The values of FA in NAWM were significantly lower at centrum semiovale and posterior periventricular white matter than those of controls ($p < 0.05$). The values of MD in NAWM were significantly higher at the anterior periventricular white matter and corpus callosum than those of controls ($p < 0.05$). The values of FA in NAWM located at anterior periventricular white matter correlated inversely with the Z scores of executive function ($r = -0.420$, $p = 0.028$).

Conclusions: DTI may provide some important information about the cognitive dysfunction in patients with LA, which may largely attribute to the disconnection of cortico-subcortical pathways, with the evidence of reduced FA and increased MD.

yuan_doctor@163.com