



Study of diffusion tensor imaging in the identification of mild cognitive impairment

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Abstract:

Background and Objective:

We aimed to determine whether and how diffusion tensor imaging(DTI) could identify mild cognitive impairment (MCI).

Materials and methods:A total of 50 subjects were recruited for a multi-modal imaging (3T MRI and DTI) study : mild cognitive impairment (MCI) (n = 30),cognitive normal(CN) (n = 20). Measure and compare the region of interests (ROI): ADC(apparent diffusion coefficient) and FA(fractional anisotropy) values of bilateral hippocampus, bilateral temporal lobe, bilateral frontal lobe, genu and splenium of corpus callosum(CC),bilateral posterior cingulate gyrus. The correlation between the FA values of MCI group and the sub-item scores of MOCA scale was analyzed.

Results:The results showed that the FA values of the left hippocampus and the corpus callosum of the MCI group was lower than that of the CN group(P<0.01).The FA values of the bilateral posterior cingulate gyrus of the MCI group was lower than that of the CN group(P<0.05).The ADC values of hippocampus was higher than that of CN group(P<0.01). The FA values of the lesion area in the MCI group was positively correlated with the computational power, delayed recall, and abstract thinking function scores in the MOCA scale sub-item.

Conclusion:Partial white matter(WM) fiber tracts had Varying degrees of defects.The FA values of the left hippocampus ,genu of corpus callosum and bilateral posterior cingulate gyrus decreased. The FA value of lesion area in MCI group was positively correlated with the scores



of calculating power, delayed recall and abstract thinking function in each item of MOCA scale.The value of FA can indicate the level of cognitive function to some extent.Therefore, DTI has certain diagnostic significance in identifying MCI.

Biography:

I work on Machine Translation, focusing on efficient data utilization for low-resource languages, domain adaptation, and any other scenarios when the data with desired properties is limited.

Publication of speakers:

1. SwitchOut: an Efficient Data Augmentation Algorithm for Neural Machine Translation
2. X Wang, H Pham, Z Dai, G Neubig, EMNLP 2018
3. XNMT: The extensible neural machine translation toolkit
4. G Neubig, M Sperber, X Wang, M Felix, A Matthews, S Padmanabhan, AMTA 2018 42
5. 2018 372018 compare-mt: A Tool for Holistic Comparison of Language Generation Systems
6. G Neubig, ZY Dou, J Hu, P Michel, D Pruthi, X Wang, NAACL 201

Webinar on Modern Trends in Dementia and Alzheimer’s, August 17, 2020, Berlin, Germany

Citation: Xinyi Wang, Study of diffusion tensor imaging in the identification of mild cognitive impairment, Dementia Conclave 2020, August 17, 2020, Berlin, Germany