عنوان مقاله:

changes of functional connectivity and amplitude of flactuations in resting state fMRI data of parkinson disease

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خلاصه مقاله:

Parkinson's disease (PD) is a progressive neurological disorder characterized by tremor, rigidity, and slowness ofmovements. Determining changes of spontaneous activity and connectivity of the brain is a critical step towards treatment of PD patients. Resting State functional Magnetic Resonance Imaging (RS-fMRI) is a non-invasive method that we use in this work to investigate intra- and inter-regional features of the brain. To this end, we apply three methods, Spontaneous Low Frequency Fluctuation (SLFF), Regional Homogeneity (ReHo) and Seed Correlation Analysis (SCA). The results of advanced statistical image analysis on SLFF maps show hypoactivation inthe basal ganglia and hyperactivation in the motor cortex and the cerebellum. We found that the seed correlation value between Left cerebellum and left putamen is the most discriminating parameter between Parkinson patients and healthy group. Moreover, SCA features are more significant compared to the intra-regional features (SLFF or ReHo). The result of clustering by 16 selected features is 85%.

کلمات کلیدی:

Keywords-functional Magnetic Resonance Imaging (fMRI); Medical Imaging; Resting State; Spontaneuos Low Frequency Fluctuations(SLFF); Regional Homogeneity(ReHo); Seed Correlation Analysis(SCA);kmeans clustering

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