



Editorial

Early Biomarkers for Neurodegenerative Disorders



At transition from symptomatic to course-modifying therapies for neurodegenerative disorders, biomarkers play a crucial role for identification of patients with appropriate neurobiological targets. Biomarkers, therefore, have been becoming an essential part of neuroscientific research¹. A biomarker is ideally an indicator that can be measured accurately, easily, and cheaply, preferably with non-invasive techniques. In this issue, we appreciate Gozke E et al's study "Visual Event Related Potentials in Patients with Mild Cognitive Impairment" from Istanbul, Turkey². Mild cognitive impairment is one of the prodromal conditions for dementia. Event related potentials are among the most frequently used examination in neurophysiology, recorded from the scalp to provide information of brain function. Although the present pre-symptomatic diagnoses of neurodegenerative disorders mainly depend on the neuroimaging modalities, Gozke E et al's study is still inspiring for relevant research in the future. The commonly used neuro-imaging includes those like positron emission tomography (PET) sensitive to amyloid and structural MRI studies of gray matter atrophy³.

One important goal to apply these biomarkers is to make possible that the disease-modifying treatments may achieve the objective of significantly delaying the symptomatic and disabling development of neurodegenerative disorders. However, present neuroimaging measures still face significant challenges on clinically acceptable sensitivity and specificity. For example, PET amyloid imaging may be able to identify cumulating amyloid, but there is the risk of a false-positive result particularly in the elderly. At another hand, neurodegenerative conditions are progressive in nature, which mechanisms of progression in humans are largely unclear. Research on those early biomarkers can contribute to improving

our understanding of mechanisms of disease progression and the development of novel treatment targets.

Early biomarker investigations for neurodegenerative disorders follow a similar way to the drug discovery research, that is, from exploratory use in the prodromal stages to publication and approval, and hopefully onward to the clinical adoption. Gozke E et al's study provides one example of those efforts. Much further work is still welcome anticipated from this kind of research to advance biomarkers for neurodegenerative disorders.

References

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