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Editing Biomarkers to Better Understand the Nervous System

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INTRODUCTION

Neurological diseases are a major health and socioeconomic problem, the second leading cause of death and the leading cause of disability worldwide. Despite the implementation of strategies and intervention programs to reduce the burden, the incidence, prevalence, mortality and disability rates of neurological disorders have declined worldwide over the last 25 years, mainly due to population aging and growth increasing inside. This is putting enormous pressure on the healthcare system to improve patient outcomes and reduce healthcare costs by enabling more effective drug development and establishing a more individualized approach to healthcare.

DESCRIPTION

It emphasizes the urgent need to identify new strategies for biomarkers such as genetic traits, biochemical alterations, structural or functional trait changes are needed to aid in the diagnosis of. As new drugs and therapeutic strategies are developed, biomarkers are also needed to measure the efficacy of these treatments. Especially given the enormous social and economic burden currently attributed to these diseases. This article aims to describe the biomarker development process and describe the current state of biomarker research relevant to major neurological diseases such as stroke, motor neuron disease, Alzheimer's disease, Parkinson's disease and Huntington's disease. Nerve axonal injury is a pathological substrate for persistent disability in various neurological diseases. Reliable quantification and long-term tracking of such damage is critical for assessing disease activity, monitoring therapeutic response, facilitating therapeutic development, and determining prognosis. The neurodegenerative process can be viewed as a continuum. It begins with protein misalignment caused, for example, by hyper phosphorylation leading to the formation of oligomers. Plaques deposited extracellular next to nerve cell terminals in Alzheimer's disease are composed of a protein called β-amyloid 1-42. The neurofibrillary tangles found in nerve cells are composed of tau protein. Lewy bodies are found in Parkinson's disease and Lewy body dementia and are made of a protein called α-syncline. All of these aggregates damage neurons. This leads to loss of synaptic integrity, or synaptic degeneration, leading to cognitive decline and other neurological symptoms. It is a heterogeneous condition with functional outcomes that can vary widely between individuals. Analysis of large databases led to the development of the commonly used IMPACT and CRASH prognostic models. This includes variables such as age, Glasgow Coma Scale (GCS) motor score, and pupillary reactivity. Although these models can quantify the risk of poor functional outcome in patients with moderate or severe traumatic brain injury, additional studies are needed to improve the accuracy of the models and better inform the clinical practice of individual patients. It requires identification of predictors of Frost and Sullivan recently invited academic and industry leaders in neuroscience research to a virtual think tank series entitled Brain Biomarkers, a unique thought-his leadership forum. The forum brought together leaders involved in research on biomarkers of the Central Nervous System (CNS).

CONCLUSION

The Virtual Think Tank will stimulate discussion about the technological advances in this field, current advances, future implications of today's R and D, unmet tool needs, and provide insight into the future use of biomarkers in CNS disease. We left with major challenges and expectations.

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CONFLICT OF INTEREST

The author's declared that they have no conflict of interest.

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