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Commentary

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Pharmacogenomics: Applied and Translational Neurogenomics

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COMMENTARY

New genomic technologies and epigenetic studies are elucidating the pathophysiological pathways underlying neurological and psychiatric diseases such as Alzheimer's disease, Parkinson's disease, multiple sclerosis, autism, migraine, schizophrenia, major depression and other nervous system disorders. Interactions between genetic factors, epigenetic profiles, environmental risk and other pathological mechanisms are being studied in greater depth. The discovery of molecular mechanisms, such as abnormal gene silencing, overexpression or the production of toxic RNAs and/or proteins, demonstrates the importance of genomic regulation.

While this provides hope for better therapeutics, translational neurogenomics is hampered by the variability in disease penetrance and the spectrum of clinical manifestations, severity and evolution. Furthermore, while new molecular discoveries and bioinformatics programmes are rapidly improving diagnostic algorithms and laboratory methods, the application of this new genomic knowledge to appropriate clinical care has yet to be fully validated a wide range of subjects in this rapidly evolving field, as well as geographical coverage.

The association between CYP2D6 polymorphisms and risperidone adverse effects in the South African population falls under the purview of neuro-pharmacogenomics. This study discovered a new CYP2D6 polymorphism in this population, emphasizing the need to investigate populations of different ancestries before clinical use of pharmacogenetics markers can be translated to non-Caucasians. Neuro-pharmacogenomics is also addressed, which investigated the clinical validity and utility of combinatorial.

Pharmacogenomics to improve psychiatric medication selection, they emphasize the importance of clinical education about the benefits of pharmacogenomics testing in psychiatry in order to optimize treatment decisions and improve patient outcomes highlight the potential impact of neurogenomics research on African science and healthcare Among the factors that make the African continent promising for shedding new light on the genomics of neuropsychiatric and developmental diseases is the diversity of genetic makeup and gene-environment interactions, as well as the opportunity for drug discovery through traditional medicine. Some challenges, on the other hand, include a scarcity of trained clinical specialists and neuroscientists.

Long-term funding and the ethical implications of genetic data misuse on vulnerable participants "Neurogenomics: An Egyptian Perspective" is an excellent addition to the current ATG paper, as it highlights the state of neurogenomics in Egypt, one of the largest African countries. The study highlights various challenges as well as potential solutions.

This is consistent with the who discuss the challenges and opportunities for neurogenomics emphasize the importance of increased funding and policy support for neurogenomics research in order to attract and equip the best trained scientists in the field. Long-term funding and the ethical implications of genetic data misuse on vulnerable participants

These and other advances in neurogenomics are the foundation for novel medical applications that are making their way into the clinical arena. The study emphasizes the importance of combining high throughput sequencing technologies with skilled, thorough clinical evaluation in order to maximize the diagnostic efficacy of next generation sequencing.

When it comes to diagnosing genetic neuropsychiatric disorders using genomic analyses, psychological and ethical issues must be addressed appropriately study offers insightful reflections on the key issues and addresses some aspects of the genetic counselling protocol that may help maximize its benefits while minimizing potential harm. Handling ethical, legal and social issues is a challenge for any genomic research on neuropsychiatric and neurodevelopmental disorders that are related to the essence of human individuality: Cognition, personality and behaviour.