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Perspective

An Overview on Evaluation of Autism Spectrum Disorders

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ABOUT THE STUDY

Autism Spectrum Disorders (ASDs) have a complicated etiology that is still mostly unknown. Many lines of investigation have pointed to abnormalities in cerebral circuitry and immune regulation/glial cell function pathways as the source of the problem. However, much of the research into the interaction between these two hypothesized mechanisms has focused on the involvement of exogenous stimuli and insults, such as maternal infection, in activating immunological pathways that lead to neural network abnormalities. However, given recent advances in our understanding of human neurodevelopment, particularly the vital involvement of glia and the immune system in normal brain development, it is critical to analyze these potential abnormal processes in the context of normal neurodevelopment.

The concept that the autistic brain cellular phenotype likely represents intrinsic anomalies of glial/immune processes that are constitutively operant in normal brain development and lead to observed neural network dysfunction is explored in this paper. The previous studies were done that show the interconnected roles of neuronal circuit formation, the immune system, and glial cells in the normal growing brain, and compare them to studies that show abnormal changes in these processes in autism. They investigated whether the glial/immune component of ASD is instead related to intrinsic exaggerated/abnormal constitutive neurodevelopmental processes such as network pruning by analyzing known abnormalities in the autistic brain in the context of normal brain development. This idea could also apply to other neurodevelopmental disorders with genetic and clinical similarities to autism.

The complicated processes that lead to the fully formed human brain include a variety of mechanisms ranging from hereditary factors to environmental and experiential factors. While the precise mechanisms underlying human neurodevelopmental disorders such as Autism Spectrum Disorder (ASD) are still unknown, significant progress has been made in documenting the cellular and anatomical events that occur as the normal human brain develops and matures over the last several decades.

It's crucial to think about autism research in terms of normal cellular/anatomic brain developmental patterns, because abnormalities in the autistic brain are likely the result of an exaggeration and/or under-utilization of normal physiological processes that are constitutively operant during neurodevelopment. This hypothesis is especially relevant to studies of cytokines, the immune system, and glia in autistic patients, because abnormalities in these processes are frequently thought to be a reaction to exogenous insults, when it is entirely possible that these findings are aberrations of otherwise normal neurodevelopmental mechanisms.

The migration of progenitors to the developing neocortical layers is aided by a collection of structures that emerge only transiently throughout the fetal period. The prelate is formed by the very first neurons that populate the growing neocortex, and it is separated into two different structures by arriving neurons: The marginal zone and the sub plate. The area between the marginal zone and the sub plate serves as a hub for new neurons entering, and it will eventually form layer of the developing neocortex.

CONCLUSION

All new cells will create increasingly more superficial layers of the neocortex in human brain development. Autism Spectrum Disorders (ASDs) is a common problem, it is important to evaluate the all humans with a thorough physical examination to underlying the abnormalities. The developing of neocortex solves the side effects of disorders.

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