

BRAIN IMAGING AS A DIAGNOSTIC TOOL IN CLINICAL PRACTICE?

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Based on the sound knowledge of clinical psychiatry neuroscientists embark since over 20 years to discover the biological bases of mental disorders. Whereas the „window to the brain“ was firstly dominated by neuroendocrine and biochemical models, we now have the possibility to use sophisticated brain imaging techniques which span from electrophysiology to techniques derived from nuclear medicine. Furthermore, the combination of brain imaging techniques with genetic variables promises to have a close insight into brain-environment interactions. For treatment of psychiatric diseases, multidimensional criteria for selection of a psychotropic medication is necessary to not only judge the clinical phenotype but also the functional phenotype and finally the genotype. Whereas the clinical phenotype is characterized by psychiatric syndromes including psychiatric and somatic comorbidity, the functional phenotype can be uncovered with neuroendocrine measurements, sleep physiology, imaging techniques as well as proteomics. Finally, the genotype can be characterized by single nucleotid polymorphisms (SNP), coupling as well as the determination of candidate genes. Imaging genetics is a new way to achieve insight in the genetic variables of changes on a cellular level which thereafter influence information processing and finally are represented in complex functional interaction of human behavior. Based on this knowledge it is evident that psychiatrists not only should be determined to the clinical symptomatology of their patients but also on the underlying biological processes which can in turn be influenced to various degrees with pharmacological as well as non-pharmacological treatment modalities, since the brain has a specified way to get better.

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