

AS23-04 - THE PHENOTYPE - THE STILL UNKNOWN QUANTITY IN PSYCHIATRIC GENETICS?

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Research into the genetic basis of psychiatric disorders has reached a turning point. Genome-wide association studies (GWAS), encompassing several thousand samples, have produced replicated evidence for some novel susceptibility genes; however, the genetic variants implicated so far account for only a fraction of disease liability, a phenomenon not limited to psychiatric phenotypes but characteristic of all complex genetic traits studied to date.

It appears that pure genomic approaches, such as GWAS alone, will not suffice to unravel the genetic basis of psychiatric phenotypes. Apart from sophisticated genomic, epigenomic, and neurobiological approaches, the comprehensive study of the phenotype will be a hallmark of 21st century psychiatric genetics. The analysis of cross-sectional, categorical disease phenotypes by traditional statistical tools alone will have to be replaced by novel approaches modeling the complexity of psychiatric phenotypes.

A framework is presented that encompasses strategies (1) to ascertain longitudinal phenotypes, (2) to systematically and prospectively assess environmental influences on phenotypic presentations, (3) to delineate phenotypes for pharmacogenetic studies, and (3) to define robust genotype-phenotype signatures or patterns using novel data-mining tools.