

Oral presentation

Substantial genetic overlap between neurocognition and schizophrenia: genetic modeling in twin samples

Timothea Touloupoulou*^{1,2}, Marco Picchioni¹, Fruhling Rijdsdijk³, Mei Hua-Hall^{1,4}, Ulrich Ettinger¹, Pak Sham^{3,5} and Robin Murray¹

Address: ¹Department of Psychiatry, Institute of Psychiatry, King's College London, UK, ²Department of Psychiatry, Harvard Medical School, USA, ³Social Genetic Developmental Psychiatry Research Centre (SGDP), Institute of Psychiatry, King's College London, UK, ⁴Psychology Research Laboratory, McLean Hospital, Harvard Medical School, USA and ⁵Department of Psychiatry, University of Hong Kong, Hong Kong

* Corresponding author

from International Society on Brain and Behaviour: 3rd International Congress on Brain and Behaviour
Thessaloniki, Greece. 28 November – 2 December 2007

Published: 17 April 2008

Annals of General Psychiatry 2008, **7**(Suppl 1):S8 doi:10.1186/1744-859X-7-S1-S8

This abstract is available from: <http://www.annals-general-psychiatry.com/content/7/S1/S8>

© 2008 Touloupoulou et al.; licensee BioMed Central Ltd.

Results from the first study to use twin modelling to quantify the genetic overlap between schizophrenia and neuropsychological function will be presented (recently published [1]). In the largest UK study of twins with schizophrenia two hundred sixty seven twins were invited to complete a comprehensive series of intelligence and memory tests. Both identical and non-identical twins took part, in some pairs both twins were affected by the illness and in others only one twin. Sophisticated genetic modelling statistical analyses were then used to determine to what extent the intelligence deficits were related to the genetic risk for the illness. The study reported a significant correlation between intelligence and schizophrenia with 92% of the covariance between the two accounted for by shared genetic variance. Genetic influences also explained most of the covariance between working memory and schizophrenia. Environmental effects, though separately linked to neurocognition and schizophrenia did not in general contribute to their correlation. The implication of the study is that Intelligence and working memory may be the key to identifying the genes for schizophrenia.

References

1. Touloupoulou T, Picchioni M, Rijdsdijk F, Hua-Hall M, Ettinger U, Sham P, Murray R: **Substantial Genetic Overlap Between Neurocognition and Schizophrenia: Genetic Modeling in Twin Samples.** *Arch Gen Psychiatry* 2007, **64**:1348-1355.