Methods: Two groups of schizophrenic patients (familial/non-familial), their first-degree healthy relatives and normal controls participated in the study (227 subjects in total). Planning ability was assessed using the 3-D Computerised Tower of London task (Morris et al., 1993) which requires the subject to reproduce a target arrangement in a specified number of moves.

Results: Three measures were identified: (1) accuracy of problem solving, (2) planning times and (3) subsequent execution times. Neither familial schizophrenics ($z = 1.22, P = 0.22$) nor their relatives ($z = 0.38, P = 0.69$) performed significantly worse than controls on accuracy of problem solving, as defined by the number of moves made above the ideal minimum. Non-familial schizophrenics ($z = 2.53, P = 0.01$) and their relatives ($z = 2.9, P = 0.004$) performed significantly worse than controls, on the same measure. There were no significant differences on either planning ($\chi^2 = 5.63, df = 4, P = 0.22$) or subsequent execution times ($\chi^2 = 5.16, df = 4, P = 0.27$) between the groups.

Conclusion: Familial and non-familial forms of schizophrenia might be subject to different aetiological mechanisms.

A.135. PREMORBID AND CURRENT GENERAL INTELLECTUAL FUNCTION IN FAMILIAL AND NON-FAMILIAL SCHIZOPHRENIA: A STUDY OF SCHIZOPHRENIC PATIENTS AND THEIR FIRST-DEGREE RELATIVES


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Objective: To estimate premorbid and current general intellectual levels in schizophrenic patients from multiply and singly affected families, their relatives and normal control subjects.

Methods: Premorbid and current general intellectual function was investigated in two groups of schizophrenic patients (familial/non-familial), their first-degree healthy relatives and normal controls (251 subjects in total). Premorbid and current general intellectual levels were examined using the National Adult Reading Test (NART) and Canavan’s (1986) five subtest short form (Vocabulary, Comprehension, Similarities, Block Design, Object Assembly) of the Wechsler Adult Intelligence Scale — Revised (WAIS-R).

Results: All groups scored within the average or high average IQ range. Familial schizophrenics performed significantly worse than controls ($z = 3.59, P < 0.0001$) and their relatives ($z = 3.48, P < 0.0001$) on current IQ. Non-familial schizophrenics performed significantly worse than controls and their relatives on both premorbid (non-familial vs. controls $z = 2.27, P = 0.02$; non-familial vs. relatives $z = 2.52, P = 0.01$) and current IQ (non-familial vs. controls $z = 4.58, P < 0.0001$; non-familial vs. relatives $z = 4.99, P < 0.0001$). Neither of the relative groups differed significantly from controls on either measure.

Conclusions: (1) As has previously been suggested (Aylward, 1984; Goldberg et al., 1990) schizophrenic probands score lower, even when performing within the normal limits, than would be expected from their genetic and environmental endowed potential when compared with the performance of their relatives. (2) The lower premorbid IQ found in the non-familial, but not the familial, groups might suggest a different underlying aetiological mechanism.

A.136. ASSOCIATION BETWEEN NEUROLOGICAL SIGNS AND COGNITIVE DEFICITS IN PATIENTS WITH SCHIZOPHRENIA AND THEIR UNAFFECTED RELATIVES

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Subtle neurological signs and neuropsychological deficits have been consistently reported in schizophrenia. However, the relationship between these impairments and the relative genetic and environmental contributions to their aetiology remain unclear. We explored these issues by correlating levels of neurological and neuropsychological impairment in patients with schizophrenia ($n = 26$) and their well relatives ($n = 35$). Neurological signs were measured using an adapted Neurological Evaluation Scale and divided into integrative and primary subtypes. Neuropsychological function was examined using a battery of cognitive tests including assessments of current and premorbid intelligence, verbal and visual episodic memory and shifting mental sets. The data were analysed using linear regression, controlling for age, gender and the effects of neuroleptic medication as measured by the AIMS and the TAKE scales.

There was no relationship between neurological signs and current or premorbid intelligence in either group. Having controlled for impairment of motor coordination, increased Trail Making times for Part A were associated with both integrative signs ($p = 0.038$) and primary signs ($p = 0.035$) in schizophrenic patients and with integrative signs in their relatives ($p = 0.005$). In addition, increased Trail Making times for Part B were associated with integrative signs in schizophrenic patients ($p = 0.003$). These data suggest that deficits of complex visual scanning and conceptual tracking in patients with schizophrenia are associated with neurological impairment, especially non-localised neurological deficit. This association was also found in their relatives, suggesting that dysfunctional connectivity accounting for both impairments may be genetically transmitted.