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KIBRA ALLELIC VARIATION IS ASSOCIATED WITH MEMORY PROCESSES IN EARLY ONSET SCHIZOPHRENIA

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Background: A single nucleotide polymorphism, rs17070145, in the KIBRA protein, is thought to influence memory function in humans (Papassotiropoulos et al, 2006). We sought to investigate its effect on memory performance in people with Early Onset Schizophrenia (EOS; onset before age of 18) and their first-degree relatives.

Methods: 53 EOS probands and 117 non-psychotic first-degree relatives were examined on IQ (Wechsler Adult Intelligence Scale-Revised), learning and memory (California Verbal Learning Test; CVLT). The Structured Clinical Interview for DSM-IV yielded four diagnostic groups: EOS probands; relatives with Mood Disorders; Other Axis I diagnoses; and no diagnosis (healthy relatives). Analysis of co-variance was performed, with diagnosis and genotype as fixed factors and age as covariate.

Results: Carriers of the rs17070145 T allele achieved higher performance IQ, and recalled more words in short-delayed and long-delayed recall in the CVLT compared to C allele carriers [$p < 0.003$ and $p < 0.009$, respectively]. However TT homozygotes made more perseverative errors than C allele carriers [$p=0.04$]. After applying the Bonferroni for multiple comparisons, a genotype by diagnosis interaction revealed that relatives who were TT homozygotes and had mood disorders performed better on long-delayed recall [$p < 0.04$] but made more intrusion errors in the CVLT than the CC/CT genotype group.

Conclusions: KIBRA may be involved in:

a. processes that enhance overall competence in non-verbal tasks;
b. phenotypic expression of cognition in mentally unwell relatives of schizophrenia patients.

Reference: Papassotiropoulos, A., Stephan, D.A., Huentelman, *et al.* (2006). Common Kibra alleles are associated with human memory performance. Science, 314, 475-478.

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