

Poster presentation

## Sex differences in neuropsychological functioning among patients with schizophrenia

Vasilis Bozikas\*<sup>1</sup>, Maria Giannakou<sup>2</sup>, George Garyfallos<sup>1</sup>, Kostas Fokas<sup>1</sup>, Athanasios Karavatos<sup>3</sup> and Mary Kosmidis<sup>2</sup>

Address: <sup>1</sup>2nd Department of Psychiatry, Aristotle University of Thessaloniki, Greece, <sup>2</sup>Lab. of Neuropsychology, Department of Psychology, Aristotle University of Thessaloniki, Greece and <sup>3</sup>1st Department of Psychiatry, Aristotle University of Thessaloniki, Greece

\* Corresponding author

from International Society on Brain and Behaviour: 2nd International Congress on Brain and Behaviour Thessaloniki, Greece. 17–20 November 2005

Published: 28 February 2006

*Annals of General Psychiatry* 2006, **5**(Suppl 1):S229 doi:10.1186/1744-859X-5-S1-S229

### Background

Specific neurocognitive deficits were found to act as "rate-limiting factors" to functional outcome in schizophrenia. Verbal memory, card sorting (executive functioning/set shifting), and verbal fluency restricted the functioning and adaptation of patients with schizophrenia in the outside world. Consequently, it was hypothesized that sex differences in the performance of patients with schizophrenia on some domains of cognitive functioning may contribute to the poorer social course of men with schizophrenia in comparison to women suffering from the disease. The purpose of the present study was to investigate sex differences in a group of patients with schizophrenia relative to healthy controls regarding performance in different domains of cognition.

### Materials and methods

Participants were 70 patients (44 men) with schizophrenia and 42 (21 men) normal controls. Patients with schizophrenia had a mean age of 36.30 years (SD: 10.28, range: 19–65), a mean of 10.44 years of education (SD: 3.29, range: 3–17), and a mean duration of illness of 9.73 years (SD: 8.15, range: 0.5–36). Healthy controls had a mean age of 37.88 years (SD: 15.40, range: 19–68) and a mean of 13.69 years of education (SD: 3.79, range: 2–20). The two groups were matched on age and male to female ratio, but differed in their level of education. A battery of neuropsychological tests was selected to assess executive functions/abstraction, fluency, working memory, verbal and spatial memory, attention, visuospatial ability, and psychomotor speed.

### Results

Univariate analysis of covariance, after adjusting for level of education, showed a significant effect of group for executive functions/abstraction [ $F(1,90) = 53.55, p < 0.001$ ], fluency [ $F(1,92) = 59.15, p < 0.001$ ], working memory [ $F(1,100) = 23.90, p < 0.001$ ], verbal memory [ $F(1,99) = 66.88, p < 0.001$ ], non-verbal memory [ $F(1,101) = 74.59, p < 0.001$ ], attention [ $F(1,104) = 11.96, p = 0.001$ ], and visuospatial ability [ $F(1,102) = 45.46, p < 0.001$ ], with patients with schizophrenia presenting poorer performance, and of sex for verbal memory [ $F(1,99) = 6.18, p = 0.015$ ], with women performing better than men, and spatial memory [ $F(1,101) = 4.53, p = 0.036$ ], with men performing better than women. Sex-by-Group interactions showed no significant interactions for any of the cognitive domains examined.

### Discussion

Sex differences in cognitive function in patients with schizophrenia are not robust findings. Better social outcome of women than men with schizophrenia may be accounted for by other factors, like women's higher level of social development at illness onset, cooperativeness and compliance.