

Poster presentation

The impact of symptom improvement on verbal processing in patients with schizophrenia

Vasilis P Bozikas^{*1}, Mary H Kosmidis², Maria Giannakou^{2,3}, Nikolaos Evangelatos³, George Garyfallos³ and Kostas Fokas³

Address: ¹1st Department of Psychiatry, Medical School, Aristotle University of Thessaloniki, Greece, ²Neuropsychology Group, School of Psychology, Aristotle University of Thessaloniki, Greece and ³2nd Department of Psychiatry, Medical School, Aristotle University of Thessaloniki, Greece

* 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):S156 doi:10.1186/1744-859X-7-S1-S156

This abstract is available from: <http://www.annals-general-psychiatry.com/content/7/S1/S156>

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Background

Dichotic listening techniques have been used to study hemispheric dominance for language, and thus the functional integrity of the left temporal lobe, in schizophrenia. Several studies have revealed a smaller right ear (left hemisphere) advantage for patients with schizophrenia compared with healthy subjects. The aim of the present study was to investigate changes in dichotic listening performance after acute antipsychotic treatment in a group of Greek patients with schizophrenia.

Materials and methods

Participants were 36 patients with a DSM-IV diagnosis of schizophrenia and 35 age- and gender- matched healthy controls. Participants were assessed with a computerized dichotic listening task with use of fused simple words, presumably a measure of lateralized temporal lobe language processing. The examinees were instructed merely to repeat the words they had just heard. The variable of interest was the total number of the words reported correctly separately for ear; when both words were repeated, only the first one was counted as correct. Both groups were evaluated twice within an interval of approximately one month; patients underwent clinical and neuropsychological assessment at the beginning and again at the end of their hospitalization (mean duration 33.4, SD: 17.8 days).

Results

Repeated measures analyses of variance, after controlling for level of education, revealed a significant main effect for Group [$F(1,68) = 33.96, p < 0.001$], with schizophrenia patients reporting fewer correct words than the healthy comparison group. There was also a significant main effect for Ear [$F(1,68) = 5.23, p = 0.025$] (more correct items were reported from the right ear) but not for Time of testing [$F(1,68) = 1.84, p = 0.18$]. There was also a marginally significant two-way interaction of Group x Ear [$F(1,68) = 3.18, p = 0.08$], but not for Group x Time [$F(1,68) = 0.39, p = 0.54$]. Patients with schizophrenia reported fewer correct words from the right ear, [$t(69) = 3.19, p = 0.002$], but not from the left ear [$t(69) = 0.96, p = 0.34$], compared to the control group. Finally, the three-way interaction Group x Ear x Time [$F(1,68) = 0.40, p = 0.84$] was not significant.

Conclusions

Patients with schizophrenia displayed a marginal absence of the expected right ear advantage in comparison with the healthy control group, whereas the latter group clearly showed this right ear advantage. Significant improvement in symptom ratings (positive symptoms, negative symptoms or general psychopathology) did not correlate with performance on dichotic listening in the patient group, suggesting that reduced functional laterality in schizophrenia is independent of clinical status.