

Poster presentation

Tridimensional reconstruction of cerebral volumetry in schizophrenia

N Andreone^{*1,2}, M Tansella^{1,2}, R Cerini³, G Marrella¹, G Rambaldelli^{1,2},
L Pelizza^{1,2}, A Versace^{1,2}, C Barbui¹, M Nosè¹, A Gasparini³ and P Brambilla^{2,4}

Address: ¹Department of Medicine and Public Health, Section of Psychiatry and Clinical Psychology, University of Verona, Italy, ²Verona-Udine Brain Imaging Program, Inter-University Center for Behavioural Neurosciences, University of Udine and ^{*}University of Verona, Italy, ³Department of Morphological and Biomedical Sciences, Section of Radiology, University of Verona, Italy and ⁴Department of Pathology and Experimental and Clinical Medicine, Section of Psychiatry, University of Udine, Italy

* Corresponding author

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Backgrounds

magnetic resonance imaging (MRI) studies have shown cerebral volume atrophy and ventricle enlargement in schizophrenia, although not in all reports. Discrepancies are mainly due to population and post-processing differences. In this MRI study we explored the cerebral anatomy in patients with schizophrenia and matched normal controls using a 3D technique.

Materials and methods

Twenty-five patients with schizophrenia selected from the Southern Psychiatric Care Verona Register (PCR) and diagnosed using the IGC-SCAN were recruited. Twenty-five normal controls were also studied and 1:1 matched with patients for age, gender, race and handedness. All subjects underwent an session of MRI using a Siemens 1.5T scanner (TR = 2060 ms, TE = 3.9 ms, slice-thickness = 1.25 mm) and the semi-automatic software Amira (TGS, San Diego, CA, USA) was used for 3D reconstruction.

Results

compared to controls, patients suffering from schizophrenia had significantly higher intracranial and total cerebral volumes and significantly lower 4th ventricle volumes ($p < 0.01$). Also, age directly significantly correlated with lateral and 3rd ventricle volume in subjects with schizophrenia ($p \leq 0.02$), but not in normal controls ($p > 0.05$). No significant associations were reported between clinical variables and 3D volumes in schizophrenia ($p > 0.05$).

Discussion

this study confirmed the presence of cortical atrophy and ventricle enlargement in schizophrenia, suggesting that physiological aging effects on brain anatomy may be accelerate and faster in schizophrenia compared to normal controls.