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Are There Gender Differences in Working Memory and Executive Control in Schizophrenic Patients?

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Cognitive deficits in schizophrenia, especially those related to prefrontal cortex functions (PFC), influence the functional outcome. There is evidence that schizophrenic male and females show different patterns of cognitive deficits, but the results in the literature are still controversial.
The OBJECTIVE of this study was to evaluate different modalities of working memory (WM) and executive control (EC), both functions of the PFC, between genders in schizophrenic patients and normal controls and relate them to sex hormones, psychopathology and side effects of medication.
METHODS: We used a battery of neuropsychological tests assessing auditory and visual-spatial WM and a dual task for assessing EC. Fourty schizophrenic inpatients, partially remitted (20 female and 20 males) and taking atypical neuroleptics, as well as 20 male and 20 female healthy controls matched for age and IQ were included. Blood sex hormones (estrogen and prolactin), extrapyramidal symptoms, and current psychopathological status were evaluated.
RESULTS: Patients performed worse than controls in all neuropsychological tests. Gender differences were found only in the dual task, in which female patients showed less correct detection of trials than male patients and male and female controls. However, females also performed worse in the single visual subtest of the dual task. For control subjects no differences between genders were found. No differences in psychopathology, disease characteristics, extrapyramidal symptoms were found between genders in patients. No significant influence of estrogen was found on neuropsychological function, but females with higher prolactin levels tended to show better performance in the dual task.
CONCLUSION: The present study shows absence of gender differences in different WM modalities in healthy subjects or patients with schizophrenia. However in the dual task females patients performed worse than males, but also in the single visual subtest. This suggests that in contrast to males, non-acute female inpatients show an underlying attentional deficit, which may contribute to impairment in higher order function, like EC.