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EEG abnormalities associated with antipsychotics: a comparison of quetiapine, olanzapine, haloperidol and healthy subjects

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Background

A voluminous literature attests to the robustness of conventional EEG investigations and their clinical usefulness in disorders of the brain function. With regards to the pharmaco-EEG, general slowing of background activity, an increase in paroxysmal theta or delta activity and the development of epileptiform discharges are well documented with antipsychotic drugs. Although quetiapine has been increasingly used as an antipsychotic there is only limited knowledge about the potential risk of EEG alterations including epileptiform activity and a lack of systematic studies with this drug. We have retrospectively analysed the EEG recordings of patients treated with the new antipsychotic quetiapine and compared it with those treated with olanzapine and haloperidol and a control group of 30 healthy subjects.

Materials and methods

Digital EEG recordings of 81 patients were retrieved from a database, based on the individual medication as main selection criterion. Patients with organic brain disorders or substance abuse were not eligible. All EEGs were retrieved from the database and visually interpreted independently by two experienced raters and one experienced rater blind to medication, dosage and diagnosis of the patients. Patient groups were defined by medication as follows: quetiapine (n = 22), olanzapine (n = 37) or haloperidol (n = 22). These groups were compared with 30 healthy subjects.

Results

Overall, there were no significant differences between the four groups (three patient subgroups and one control group) in sociodemographic parameters. Within the 4 subgroups results regarding abnormal EEG's differed statistically significantly. One patient from the quetiapine group (5%), 13 olanzapine patients (35%), five of the haloperidol patients (23%) and two subjects of the control group (7%) had an abnormal EEG. Epileptiform activity was observed in four patients (11%) of the olanzapine group, and none in the others. EEG abnormalities were statistically significantly increased with dose in the olanzapine group, in contrast to patients treated with haloperidol, quetiapine or healthy subjects

Discussion

EEG abnormalities seem to occur rarely in patients treated with quetiapine comparable to the control group, but significantly more often with haloperidol and olanzapine, possibly due to different receptor profiles of these substances. Quetiapine might be considered as an treatment option for neuropsychiatric patient, e.g. for patients with the diagnosis of epilepsy or seizures with psychosis.

References

1. Centorrino F, Price BH, Tuttle M, Bahk WM, Hennen J, Albert MJ, Baldessarini RJ: **EEG abnormalities during treatment with typical and atypical antipsychotics.** *Am J Psychiatry* 2002, **159:**109-115.
2. Wetzel H, Szegedi A, Hain C, Wiesner J, Schlegel S, Benkert O: **Seroquel (ICI 204 636), a putative "atypical" antipsychotic, in schizophrenia with positive symptomatology: results of an open clinical trial and changes of neuroendocrinological and EEG parameters.** *Psychopharmacol (Berlin)* 1995, **119:**231-238.