

Digital EEG Recording during hallucinatory behavior in paranoid schizophrenia

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Hallucinating patients experience subjectively true perceptual experiences without true stimulation. This study attempted to visualize the electroencephalographic changes accompanying these experiences. Fifteen cases having paranoid schizophrenia (according to DSM-IV criteria) with hallucinations and ten controls having paranoid schizophrenia without hallucinations were subjected to physical and neurological examination, then to digital EEG recording during their hallucinatory experience. Concerning the case group ten patients had single modality auditory hallucinations and five had multimodality hallucinations (auditory hallucinations combined with other modalities, four patients with additional visual and one patient with additional tactile hallucinations).

There were no statistically significant differences between the cases and controls as regards the age at onset of paranoid schizophrenia, the age at recruitment, the duration of the disease, sex and antipsychotic therapy.

Among the case group, EEG recording during hallucinatory behavior showed positive electrographic correlates in nine patients and negative electrographic correlates in six patients. EEG findings were epileptiform in 6/15 patients. All the epileptiform EEG were among the group of patients with positive correlates. All EEG findings were either in the frontal or temporal lobe or in both lobes. Of the focal EEG findings, 6/10 patients had bilateral abnormalities and 4 had right sided abnormalities. The case group had a statistically significant more EEG abnormalities than the control group and 40% of them had epileptiform EEG abnormalities in contrast to none of the control group. Among the case group, there was no statistically significant correlation between the

age of onset of the disease, duration of the disease, sex, type of antipsychotic therapy, modality of hallucination and EEG findings.

In conclusion, a significant number of paranoid schizophrenic patients with hallucinations have EEG correlates and that can help in understanding the pathophysiology of these hallucinations. In addition, it may shed light on the relation between psychosis and epilepsy.