Neuroelectrophysiological evaluation of hyperthyroid patient

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Abstract

Thyroid gland dysfunction is frequently associated with central nervous system disturbance. The effect of hypothyroidism on the C.N.S was thoroughly studied, while studies of the hyperthyroid effect on C.N.S are scarce. Therefore, the aim of this work was to assess the effect of excess thyroid hormone on C.N.S by using visual, auditory, somatosensory evoked potentials, and to study the effect of treatment of thyrotoxicosis on any changes obtained in the evoked potentials. This study was conducted on 20 adult Egyptian hyperthyroid patients. The patients were subdivided into 2 subgroups (Ia) consisted of 10 untreated patients and (Ib) with 10 treated patients, compared to 20 subjects age and sex matched as a control. They were subjected to PVEP and PERG elicited by pattern reversal checkerboard, BAEP elicited by alternating click stimuli and SSEP elicited by electrical stimuli. Evaluation of the responses was based on assessment of the absolute latency, amplitude, interpeak latencies and interside difference of latency. In the present study, 30 of the untreated patients and 20 of the treated ones showed prolonged P100 latency of the VEP, while 20 of the untreated and treated groups had increased amplitude of the P100 wave. There was no significant difference between the treated and untreated groups concerning the P100 latency, amplitude, and interside difference of latency. The period that the patients have been euthyroid after treatment is unknown, which may affect the results of the VEP. In the BAEP results there was a statistically significant increase in the interside difference of the interpeak latency of waves I-V in 20 of the untreated patients, while it was not significant in the treated group. In the present study, there was no significant difference between the untreated and treated groups however the interside difference of the interpeak latency of waves I-V was significant in the untreated group only. These findings mean that the euthyroid state improves the interside difference between right and left concerning the interpeak latency of waves I-V. In the present study no statistically significant results were obtained from PERG and SSEP.

Keywords

NEUROELECTROPHYSIOLOGICAL EVALUATION, HYPERTHYROID PATIENT,