Short-Term Efficacy of Oral Rehydration Salts and Propranolol Treatment in Pediatric Patients Showing Orthostatic Intolerance Symptoms During Head Up Tilt Test

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Purpose: The goal of this study is to evaluate short-term efficacy of the therapeutic regimen composed of oral rehydration salts, propranolol in children showing orthostatic intolerance (OI) symptoms and different hemodynamic patterns during head up tilt table test.

Method: Pediatric patients who were exposed to tilt test because of syncope and diagnosed with orthostatic intolerance (OI) disorder were divided into groups based on their distinct hemodynamic patterns. Group I consisted of pediatric OI group, (n=28). Group 2 consisted of POTS group, (n=24). Group 3 consisted of patients meeting the criteria of accelerations in heart rate of OI but not showing any symptoms (control group, n=26). The patients in group 1 and group 2 were administered rehydration salt and propranolol treatment together. The patients in group 3, control subjects, were given rehydration salts treatment alone. The response rates of patients to rehydration salts and propranolol treatment were evaluated.

Results: There were no statistically significant differences between the groups with regard to age, gender, BMI, the frequency of syncope attacks prior to the treatment. Post-treatment frequency of syncope attacks were found to be significantly reduced in all groups in comparison with pre-treatment status. The median number of pre-treatment vs. post-treatment syncope attacks were 3 (min 2 max 20) vs. 0(min 0 max3) in group 1 (P < 0.01), 3 (min 2 max 5) vs. 0(min 0 max1) in group 2 (P < 0.01), 3 (min 2 max 10 ) vs. 0(min 0 max1) in group 3 (P < 0.01). When treatment response rates of OI group were compared with that of POTS group and control group, it was found to be statistically significantly lower than both POTS group and control group (P <0.01, p= 0.03, respectively).

Conclusions: In general, therapy with rehydration salts and propranolol was found to be efficacious to reduce the frequency of syncope attacks in pediatric patients showing orthostatic intolerance disorder. That the patients in OI group had lower rates of treatment response was thought to be due to that this group of patients were likely to have a distinct pathophysiology and hemodynamic pattern.