

ABSTRACT

**ANALYSIS OF CORRELATION OF LEPTIN LEVELS ON BODY WEIGHT IN PEDIATRIC EPILEPTIC SEIZURES WITH VALPROIC ACID MONOTHERAPY
(Study at Neurology Departement and the Pediatric Departement, Airlangga University Hospital Surabaya and Ngudi Waluyo Hospital Wlingi Blitar)**

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Background: Epilepsy is a neurological disorder that occurs due to the abnormality and excessive electrical activity of neurons in the brain. Valproic acid (VPA) is the first choice in focal and general epilepsy in children because it has broad spectrum efficacy and shows high success rates as monotherapy. However, the reported of VPA side effects are weight gain about 10% up to 70%. VPA reduce leptin secretion, this cause appetite increases and weight gain.

Objective: The aim of this prospective observational cohort study was to analyze the correlation of leptin levels and body weight in epileptic seizures patients with valproic acid monotherapy.

Method: This study was conducted with an observational prospective cohort design. Data was collected at the period of April to June 2019. The inclusion criteria are children aged 2-17 years who used VPA monotherapy regimens < 2 years, not taking drugs that affect body weight and not diagnosed with nephrotic syndrome, syndrome lupus erythematus, and diabetes mellitus. Measurements of body weight and leptin levels were performed on subjects who came to the polyclinic at the time of the study and measured again after 1 month using VPA. Measurement of leptin level were used ELISA kit.

Result: A total of 17 subjects participated in this study (male 10; female 7; mean age was 10 years). There was a significant increase in pre and post body weight ($p < 0.05$) and no significant difference between pre and post leptin levels ($p = 0.41$). After testing the correlation with Pearson test for changes in body weight and leptin levels, it was found that there were no significant correlation ($p = 0.36$; $r = -0.23$). Factors such as gender and appetite affect changes in body weight significantly. While dosage form, dosage, duration of therapy and puberty status did not significantly influence body weight and leptin levels.

Conclusion: There was no significant correlation about body weight and leptin levels in pediatric epileptic seizures with valproic acid monotherapy.

Keyword: Epileptic Seizure, Pediatric, Valproic Acid, Body Weight, Leptin