

Poster #16**Anna Sciegienka****Other, College of Pharmacy****Pharmacy****Pharmacy Resident (Pharm.D.)****Title of Research:** Association Between Topiramate Use and Serum Bicarbonate Levels in a Veteran Population**Other Authors:** Tami Argo, MS, BA, PharmD, BCPP Matthew Cantrell, PharmD, BCPS Bruce Alexander, PharmD, BS**Introduction/Purpose:**

Topiramate has been associated with metabolic acidosis secondary to decreased serum bicarbonate. Product labeling recommends serum bicarbonate monitoring at baseline and periodically thereafter. The objective of this study was to assess changes in serum bicarbonate within the first year of topiramate use in an outpatient veteran population.

Experimental Design:

This was a single center retrospective cohort study conducted at the Iowa City Veterans Affairs Health Care System. Criteria for inclusion required a minimum of one outpatient topiramate prescription between October 1, 1999 and August 31, 2012 and at least one serum bicarbonate level within 12 months prior to topiramate initiation. Patients with topiramate nonadherence, concurrent use of sodium bicarbonate or oral carbonic anhydrase inhibitors, and serum bicarbonate values obtained during inpatient hospitalizations were excluded. Change in bicarbonate was evaluated using a paired t-test. Decreases in bicarbonate of ≥ 5 mEq/L, values < 20 mEq/L, days to lowest value, and correlation between adverse drug reactions (ADR) and topiramate discontinuation were evaluated.

Results:

Of 546 patients reviewed, 350 met inclusion criteria. There was a statistically significant decrease of 2.7 mEq/L in bicarbonate post initiation. Only one patient had a bicarbonate value < 17 mEq/L. There was no association between bicarbonate decrease ≥ 5 mEq/L and ADR.

Conclusions:

A statistically significant reduction in bicarbonate levels occurred with topiramate. However, ADR did not correlate with bicarbonate levels < 17 mEq/L or a decrease ≥ 5 mEq/L. Serum bicarbonate levels should only be monitored before initiation of topiramate and in patients presenting with symptoms suggestive of acidosis.