

The following abstracts were presented as posters at the 2017 NEI Congress

Congratulations to the scientific poster winners:

1st Place: #178—Gender Differences in Prodromal Symptoms of Dementia

2nd Place: #146—Effect of Heroin Use on Changes of Brain Functions As Measured by fMRI, a Systematic Review

3rd Place: #185—Second Generation Antipsychotics and Catatonia: A Literature Review

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Reciprocal Relationship Between Olfactory Ability and Olfactory Hallucination

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ABSTRACT: Introduction: Transient fluctuation of smell concurrent with phantosmia has not been reported. Four such cases are presented.

METHODS: Case 1: A 27-year-old left handed (pathological) female, 7 years prior to presentation, noted constant olfactory hallucinations of dried blood and rotten sour eggs, level 8/10 in intensity.

Results: Without phantosmia: Alcohol Sniff Test (AST): 14 (hyposmia). Brief Smell Identification Test (BSIT): 10 (normosmia). Retronasal Smell Index: 0 (abnormal).

With phantosmia: AST: 1 (anosmia). BSIT: 12 (normosmia). Retronasal Smell Index: 0 (abnormal). Normal 72-hour EEG and MRI.

Case 2: A 19 year old right-handed woman presented with a 4 month history of unpleasant, fruity, rotten phantosmia occurring three times a day, 6-7/10 in intensity.

Results: Without phantosmia: Pocket Smell Test (PST): 3 (normosmia). AST: 30 (normosmia). With phantosmia: AST: 13 (hyposmia). CT scan: normal. MRI: normal.

Case 3: A 40 year old right-handed female presented with ashtray/cigarette phantosmia, occurring 10 times a day, lasting seconds to all day, 10/10 in intensity. Her sense of smell is normal except when the phantosmia is present, during which time it decreases to 70% of normal.

Results: Without phantosmia: BSIT: 11 (normosmia). AST: 30 (normosmia). With phantosmia: AST: 11 (hyposmia). PST: 3 (normosmia). EEG: normal. MRI: few subcortical white matter hyperintensities on flair imaging.

Case 4: A 60 year old right handed male with type 1 diabetes mellitus presented with four months of

phantosmia of sweet tobacco, level 8/10 in severity, involves both nostrils, lasting 10 seconds and occurring two times a day. Over time, the hallucinated odor changed to a soapy smell 2-3/10 in intensity.

Results: Without phantosmia: AST: 6 (hyposmia). BSIT: 8 (hyposmia). With phantosmia: AST: 1 (anosmia). PST: 2 (hyposmia). CT scan: normal.

DISCUSSION: Olfactory ability should be assessed in those with phantosmia, both during and in the absence of hallucinated odors, to detect transient olfactory deficits in order to direct treatment towards this condition.

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Valproate-Induced Hyperammonemic Encephalopathy: Case Studies

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ABSTRACT: BACKGROUND: Hyperammonemia and carnitine deficiency with concomitant encephalopathy have been reported to result from valproic acid administration (Coulter DL, J Child Neurol 1991Jan; 6(1); 7-14 and Mock, CM, et al, Am J Health Syst Pharm, 2012 Jan; 69(1):35-9). Although there have been numerous publications regarding this adverse event in the neurology literature, there have been very few reports published in the psychiatric literature. The reported incidence of hyperammonemia in children treated with valproate is 19%. It is important that prescribers be aware of the risk of valproic acid induced hyperammonemic encephalopathy, as well as its diagnosis and management.

OBJECTIVE: The current study explores the feasibility of reversing Valproate Induced Hyperammonemic Encephalopathy (VHE) by discontinuing valproic acid and normalizing the carnitine level via L-carnitine supplementation.

METHODS: Three males (ages 10-16 years), are reported with 12 - 24 month histories of cognitive decline during treatment for "Bipolar Disorder of Childhood" with valproate. All were referred with multi-year histories of explosive/impulsive aggression and multiple unsuccessful psychopharmacological regimes. The one consistent medication throughout treatment was sodium valproate. The subjects received serial neuropsychological testing, complex EEG, MRI, valproic acid, carnitine, and ammonia blood levels. Oxcarbazepine titrated to 30-50 mg/kg/day was substituted for valproate after initial testing was completed. Normative reference laboratory levels were as follows: (1) ammonia (reference interval 15-45 mcg/dl), (2) total carnitine (reference interval 34-77 nmol/ml), and (3) valproic acid (reference interval 50-125 mcg/ml).

RESULTS: Case Study 1: Male, 10 years old, ammonia 78 mcg/dl; carnitine 17 nmol/ml; valproic acid 92 mcg/ml. IQ 79 (compared to 105 one year earlier); MRI cerebral atrophy; EEG - left temporal aberrancies.

Case Study 2: Male, 12 years old, ammonia 76 mcg/dL; carnitine 14 nmol/ml; valproic acid 104 mcg/ml. IQ 89 (compared to 109); MRI normal; EEG - left temporal aberrancies.

Case Study 3: Male, 16 years old, ammonia 72 mcg/dl; carnitine 24 nmol/ml; valproic acid 125 mcg/ml. IQ 45 (compared to 65); MRI normal; EEG - left temporal aberrancies.

In all three subjects, after valproate was removed (oxcarbazepine substituted) and supplemental L-carnitine added, ammonia and total carnitine levels normalized. At one year follow up, IQ's returned to previous baselines, and MRI atrophy (Case 1) normalized. EEG aberrancies were unchanged. Patients were mood and behaviorally stable on oxcarbazepine.

CONCLUSION: Evidence of cognitive decline while on valproate warrants ammonia and carnitine level testing. If these levels are abnormal, VHE should be diagnosed and valproate should be removed as rapidly as feasible; L-carnitine supplementation (the lesser of 100 mg/kg/day or 2 grams/day) should be implemented to normalize the carnitine level.

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Using Brief Motivational Interviewing to Increase Healthy Lifestyle Habits in Overweight and Obese Adults in a Rural Family Practice Setting

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ABSTRACT: Obesity is a rapidly growing epidemic in the United States of America resulting in a multitude of comorbid conditions. Individuals living in rural areas have a higher prevalence of obesity than in urban settings. Effective treatment of obesity is needed to decrease the morbidity and mortality of this chronic disease. Using motivational interviewing (MI) techniques to address unhealthy lifestyle habits has previously proven to be effective in aiding individuals to achieve a healthier lifestyle.

OBJECTIVES: The main objective is to determine the effectiveness of brief MI used during regular office visits and with phone follow-ups on body mass index (BMI) at the initiation of the project, as well as at the 3-month follow-up. Secondary objectives are to determine the effect brief MI has on the amount of weekly physical activity, advancing the individual to the next stage on the Transtheoretical Model of Change (TTM) continuum and determining common barriers to leading a healthy lifestyle in a rural adult population.

METHOD: Participants (n = 15) were recruited using a convenience sampling method from the primary care practice. Using a pretest/posttest design, individuals were asked to complete a survey regarding their amount of weekly exercise, their perceived stage of change and their barriers to healthy lifestyle choices. A pre- and post-intervention BMI was collected. One in-office brief MI session and two monthly phone sessions were conducted, each lasting not longer than ten minutes.

RESULTS: A total of 14 participants, mostly female (67%), aged 36 to 45 years old (33%), Caucasian (73.3%), and had some college education (40%), completed the study. It was hypothesized that brief MI would result in decreased BMI, increased exercise and advancement along the TTM continuum. No significant difference in the pre-and post -intervention BMI ($M = 37.88$, $SD = 9.15$) vs ($M = 37.01$, $SD = 9.37$); $t(27) = 0.25$, $p = 0.801$ was found. Many participants (n = 10), however, had a decrease in BMI. The difference in weekly activity ($M = 644.2$ min vs $M = 268.57$ min) was not found to be statistically significant; $t(27) = 1.40$, $p = 0.17$. An increase in readiness to change was noted, but, was not significant ($p = 0.52$). Of 34 responses, chronic pain or health conditions (n = 10) and scheduling conflicts (n = 7) were the two top cited reasons for not practicing a healthylifestyle.

CONCLUSIONS: This QI project did not demonstrate statistically significant improvement in BMI, weekly exercise or readiness to change after three months of brief MI. It is important to note, however, that many individuals did experience an overall decrease in BMI. It is also promising to note that more individuals were