Tourette’s syndrome (TS) is a common neurodevelopmental disorder that starts in childhood and is characterized by multiple motor and vocal tics. The pathology of TS in published information indicates abnormalities in the balance of excitatory-inhibitory neurotransmission. Neuroleptic medications have been shown to be effective for some individuals at alleviating TS symptoms; however, these medications are not always effective and they carry significant side effects including fatigue, depression, drowsiness, tremors, cognitive dulling, irritability, insomnia, dizziness and other negative health consequences with long term use.

Although dietary treatments are generally not used in the treatment of TS, the current study was undertaken to determine if specific dietary interventions that may alter the level of brain neurotransmitters might improve tics.

**Method**

The purpose of this study was to normalize brain neurotransmitter balance through a four-part procedure, a multimodal integrative dietary approach, utilizing detoxification, whole food diet implementation, inhibitory transmitter supplements and membrane stabilizing supplements. For a 1-year time period (September 2015 - September 2016), the eligible subjects and their parents (n=13) were reviewed and educated on the protocol one patient completed 8 weeks trial. The subject was a 15-year-old girl who had developed motor tics at age 9. The subject’s symptoms of TS consisted of eyebrow raising, eye movements, and eyelid movements. Later she developed eye blinking, hiccup and guttural noise tics. Tics waxed and waned in severity over time and she did not respond to the medications guanfacine and topiramate.

Outcome measures were achieved by: TS clinical rating scales - Yale Global Tic Severity Scale (YGTSS) Clinical Global Impression – Severity Scale (CGI-S) Clinical Global Impression – Improvement Scale (CGI-I) Child Yale Brown Obsessive Compulsive scale (CY-BOCS) Swanson-Nolan ADHD scale (SNAP-IV) 3 day Food Recall Diary Phytotherapeutic Nutrient Questionnaire Nutrition Risk Screening Questionnaire Nutrition Assessment Form Whole Food Diet Compliance Log Supplement Compliance Log

**Result**

- Final YGTSS scores showed a decrease of TSS score by 36% and YGTSS by 44% (Figure 1) indicating a marked improvement in motor tic intensity rating (3 point drop; 76% improvement) and interference rating (2 point drop; 66 % improvement) comparison to baseline.
- A decrease of 10 points in her impairment score indicated improvement in self-esteem, family life and social acceptance at school.
- CGI-I Clinical Global Impression – Improvement Score at 4 weeks and 8 weeks visit indicated to be minimally improved from baseline.
- on the CYBOCS scale revealed no active OCD symptoms SNAP-IV score was 11 at base line, indicating a very mild features of ADHD; no change of SNAP score at week 4: week 8 visit showed an improvement in parent rating scale of 5 point drop at score 6 (45% improvement) from base line.
- The whole food diet compliance and Supplements compliance logs revealed ongoing excellent compliance with the Whole food diet and supplement regimen.
- The subject reported a substantial feeling of increased energy and mental sharpness.

**References**


**Figura 1**

At baseline YGTSS tic severity scale (TTS) score was 14 and the total score was 34, indicating multiple discrete tics (>5).