

BioAstin, a natural astaxanthin from micro-algae, helps relieve pain and improves performance in patients with carpal tunnel syndrome (CTS)

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Introduction

Carpal tunnel syndrome is the most common entrapment neuropathy. It involves symptoms of numbness, paresthesias and pain in the radial three and a half digits. The hallmark of the diagnosis remains the history and a careful physical examination. Treatment by wrist splint, immobilization and steroid injection into the carpal canal may provide relief and elimination of symptoms. Patients without any resolution of symptoms are generally considered candidates for surgical decompression of the carpal canal. Benefits from non surgical treatment, seems to be limited, and not all patients respond to surgery. While there are several opinions regarding effective treatment there is very little scientific support for the range of options currently used in practice. Do to complications and postoperative complaints further investigations into alternative techniques seem necessary.

Preliminary anecdotal evidence showed that regular consumption of BioAstin, containing astaxanthin, may help symptoms of carpal tunnel syndrome.

Description of the study

We preformed a pilot study to evaluate the efficacy of this product in the treatment of carpal tunnel syndrome. Each gelcap study product contained 460 milligrams high oleic safflower oil, 40 milligrams *Haematococcus* extract, 4 milligrams astaxanthin, 40 micrograms leutein, 65 International Units vitamin A (as beta-carotene), 50 International Units vitamin E (as d-alpha-tocopherol), gelatin and rosemary oil. The placebo contained food grade safflower oil

Subjects consumed three study product gelcaps daily, one with each meal, for eight weeks. Subjects were asked not to change any other medication that they were taking, either prescription or OTC. The subjects completed questionnaires (Appendix One) at the beginning of the study, at mid study (4 weeks), and after 8 weeks.

The study was a single-center, double-blind, placebo-controlled, parallel design study of eight weeks' duration with a total of 20 subjects. A group of 13 were randomized to BioAstin and a group of 7 randomized to the placebo.

Results

The daytime pain rate at the beginning, after 4 weeks and after 8 weeks was 1.69 ± 0.99 , 1.23 ± 0.70 , 1.00 ± 0.88 for the treatment group and 1.67 ± 0.47 , 1.83 ± 0.37 , 1.50 ± 0.50 for the control group. The duration of the daytime pain at the beginning, after 4 weeks and after 8 weeks was 2.15 ± 1.23 , 1.69 ± 1.13 , 1.38 ± 1.44 for the treatment group and 2.17 ± 1.07 , 2.67 ± 1.10 , 2.17 ± 1.34 for the control group. In their final report some subjects reported major changes now possible in their life style. One subjects unable to play golf for two or three days after a day of playing, was able to play again later on the same day (CP). Table 1 summarizes the results and Figure 1 and 2 visualize the decrease in pain.

TABLE 1

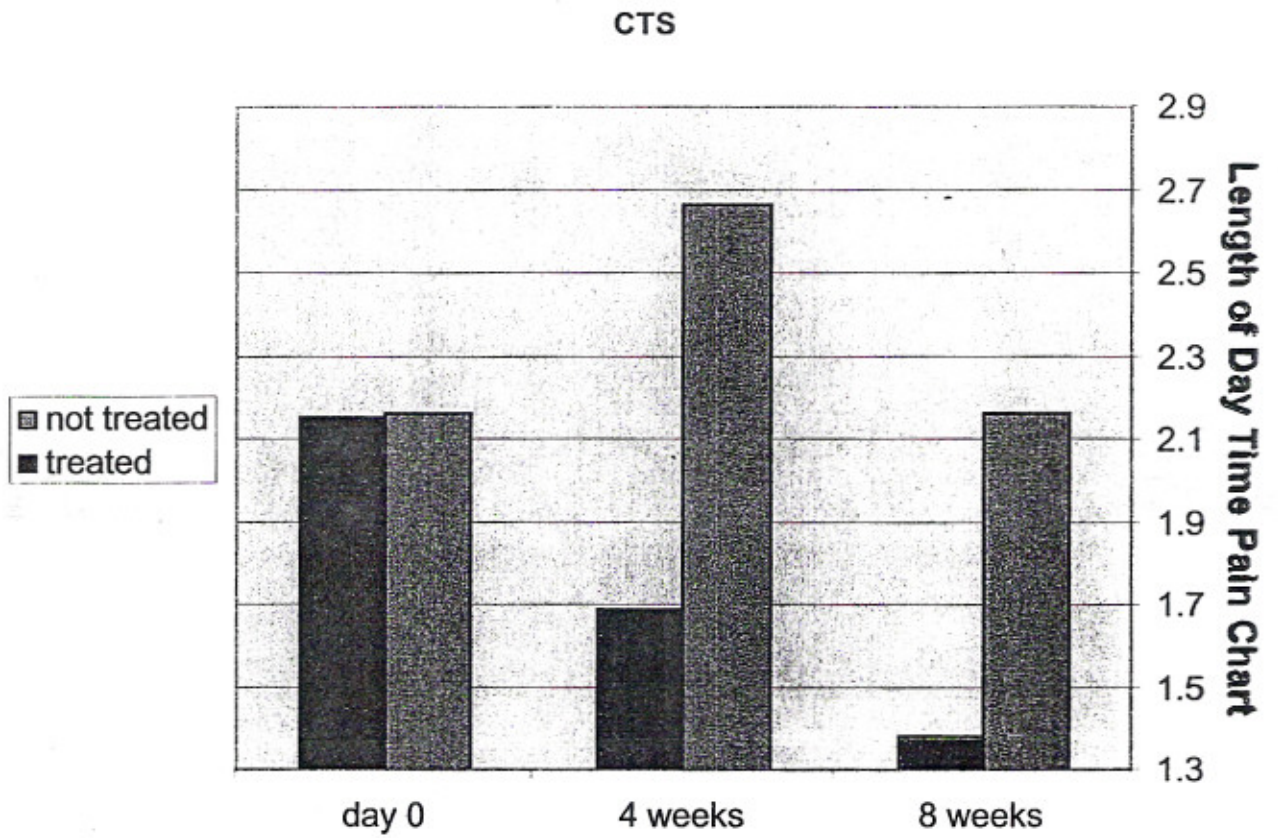
DAYTIME PAIN RATE			
	before	4 weeks	8 weeks
treatment group	1.69±0.99	1.23±0.70	1.00±0.88
control group	1.67±0.47	1.83±0.37	1.50±0.50
DURATION OF DAYTIME PAIN			
	before	4 weeks	8 weeks
treatment group	2.15±1.23	1.69±1.13	1.38±1.44
control group	2.17±1.07	2.67±1.10	2.17±1.34

In this table, lower numbers mean positive results.

Conclusion

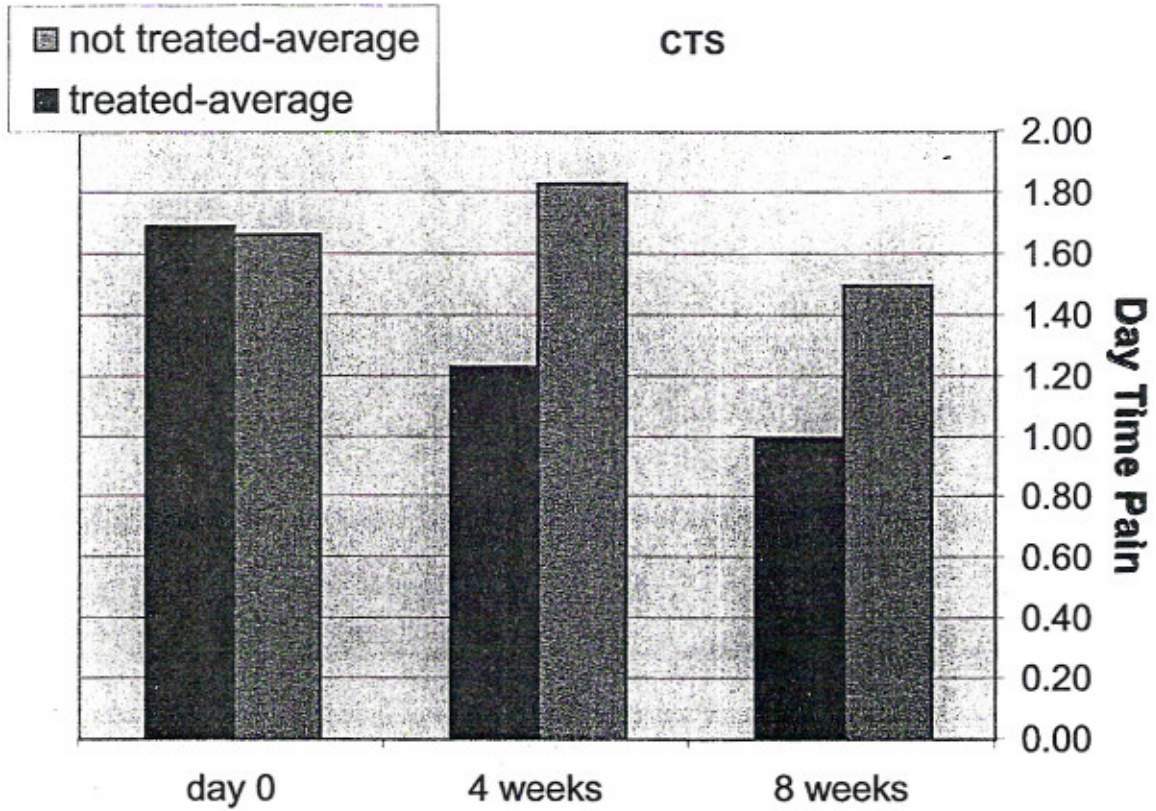
BioAstin or products containing astaxanthin may be an effective treatment for carpal tunnel syndrome allowing patients to suffer less daytime pain with a shorter duration of pain. The large standard deviations show that while there was a definite trend to lower pain and for many subjects outstanding results, because of the small number of subject the changes are not statistically significant. Further study with larger study groups is needed and this may result in statistical significance.

Figure 1 - Duration of daytime pain



The lower the value, the lower the pain

Figure 2 - Daytime pain



The lower the value, the lower the pain

Appendix One

Date _____ Print name _____

Symptom Severity Scale (SSS) — Kona Algae & Carpal Tunnel Syndrome Study

The following questions refer to your symptoms for a typical 24-hour period over the past week. For questions 2-9, please circle one answer.

1. How severe is the hand or wrist pain that you have at night? Place a mark on the line below to indicate how severe your pain is:

No pain _____ very severe
at night _____ pain
at night

5. Do you have weakness in your hand or wrist?

2. How often did hand or wrist pain wake you through the night in the past two weeks?

- a. Never
- b. Once
- c. Two or three times
- d. Four or five times
- e. More than five times

5. Do you have weakness in your hand or wrist?

- a. No weakness
- b. Mild weakness
- c. Moderate weakness
- d. Severe weakness
- e. Very severe weakness

3. Do you typically have pain in your hand or wrist during the daytime?

- a. I never have pain during the day
- b. I have mild pain during the day
- c. I have moderate pain during the day
- d. I have severe pain during the day
- e. I have very severe pain during the day

6. Do you have tingling sensations in your hand?

- a. No tingling
- b. Mild tingling
- c. Moderate tingling
- d. Severe tingling
- e. Very severe tingling

3.a. How often do you have hand or wrist pain during the daytime?

- a. Never
- b. Once or twice a day
- c. Three to five times a day
- d. More than five times a day
- e. The pain is constant

7. How severe is the numbness (loss of sensation) or tingling at night?

- a. I have no numbness or tingling at night
- b. Mild
- c. Moderate
- d. Severe
- e. Very severe

3.b. How long, on the average, does an episode of pain last during the daytime?

- a. I never get pain during the day
- b. Less than 10 minutes
- c. 10 to 60 minutes
- d. Greater than 60 minutes
- e. The pain is constant throughout the day

8. How often did numbness or tingling wake you up during a typical night during the past 2 weeks?

- a. Never
- b. Once
- c. Two or three times
- d. Four or five times
- e. More than five times

4. Do you have numbness (loss of sensation) in your hand?

- a. No
- b. I have mild numbness
- c. I have moderate numbness
- d. I have severe numbness
- e. I have very severe numbness

9. Do you have difficulty with the grasping and use of small objects, such as keys or pens?

- a. No difficulty
- b. Mild difficulty
- c. Moderate difficulty
- d. Severe difficulty
- e. Very severe difficulty

10. Did you miss taking any gelcaps during this 4-week period? No _____ Yes _____ If yes, how many did you miss _____ and give reason _____