**CASE #1039: A Case Study Evaluating the Effects of a Phytosterol and Soy Protein Functional Food, Bonito Peptides, and Coenzyme Q10 (CoQ10) in a Patient with Hypertension and Metabolic Syndrome**

Dan Lukaczer, ND  
Functional Medicine Research CenterSM, Gig Harbor, WA 98332

**PURPOSE**

The purpose of this case study was to show how targeted nutritional support using a phytosterol and soy protein functional food (provided in beverage form), bonito peptides, and CoQ10 in combination with dietary and lifestyle modifications may help lower blood pressure (BP) and improve other markers associated with metabolic syndrome.

**PATIENT'S PRESENTATION AND HISTORY**

A 53-year-old overweight Caucasian female presented with a history of hypertension and obesity. Although she was obese as a child, it was not until her college years that she started experimenting with various weight loss programs, during which she had lost and regained 50-100 lb. She characterized herself as a "stress eater" and found exercising difficult. In her mid-20s, she was diagnosed with hypertension, which was inconsistently controlled. Her mother had died at the young age of 55, so she was motivated to make lifestyle changes.

The patient's medical history and symptoms also included perimenopausal complaints over the previous 3 years, such as irregular menses, menorrhagia, and irritability. She was diagnosed with Hashimoto’s thyroiditis just prior to presentation, which was under control. Previous surgeries included a tonsillectomy at age 12 and a cholecystectomy at age 33. She had a family history of hypertension, heart disease, and obesity.

**Patient’s Objective Information**

- HT: 67.5”; WT: 261 lb; BP: 160/89
- BMI**: 40.9 kg/m²; body fat: 43.2%; lean mass: 56.8%
- Physical exam unremarkable
- Medications and supplements: several medications including lisinopril 10 mg qd, loratadine prn, ibuprofen prn, baby aspirin; multiple nutraceuticals including CoQ10, dehydroepiandrosterone (DHEA), pregnenolone, red yeast, guggal, selenium, magnesium, calcium, multiple vitamin, vitamins E and C, vitamin B blend, eicosapentaenoic acid (EPA), gamma-linolenic acid (GLA), and gamma aminobutyric acid (GABA)
- Significant laboratory findings: elevated 2-h postprandial (PP) insulin and 2-h PP glucose
- Assessment: obesity, hypertension, metabolic syndrome, and impaired glucose tolerance

**PLAN**

The patient was instructed to:

- Start phystosterol and soy protein functional food beverage, 2 servings/day
- Begin chromium, green tea, cinnamon and alpha-lipoic acid combination supplement for glucose and insulin metabolism support, 2 tablets bid
- Start encapsulated bonito peptides for blood pressure support, 500 mg tid
- Begin low-glycemic diet with no caloric restrictions
- Increase aerobic activity, working up to 150 min/week over the following 4 weeks
- Discontinue guggal, vitamin B blend, red yeast, vitamins C and E, GLA, magnesium, and calcium
- Continue prescriptive medications and other supplements

**After 3 Weeks on the Program**

The patient had already shown some improvement in her weight (250 lb), BMI (39.2 kg/m²), and BP (150/82). She reported doing well and having easier bowel movements. She was compliant with the program overall, but had some difficulty exercising due to muscle spasms in her back. She was advised to continue on the program.

**After 7 Weeks on the Program**

After 7 weeks, the patient had lost 14 lb and her body composition had also improved (BMI: 38.7 kg/m²; body fat: 42.4%; and lean mass: 57.5%). Her BP was reduced to 138/84. The patient reported feeling well and estimated her compliance on the program at 80%-90%. She was managing about 100 min/week of aerobic exercise in spite of her back problems. She was instructed to continue on the plan with a reassessment scheduled after 4 weeks. (This case is ongoing.)
Table 1. The patient's blood pressure was reduced from 160/89 to 138/84 after only 7 weeks. This result suggests a noteworthy improvement in the patient's blood pressure with the inclusion of the phytosterol and soy protein functional food, bonito peptides, and CoQ<sub>10</sub>.

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<tr>
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<th>Before Program</th>
<th>After 7 Weeks</th>
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<tbody>
<tr>
<td>Systolic BP</td>
<td>160</td>
<td>138</td>
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<tr>
<td>Diastolic BP</td>
<td>89</td>
<td>84</td>
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SUMMARY

This case study suggests that a targeted protocol that includes a phytosterol and soy protein functional food, bonito peptides, and CoQ<sub>10</sub> may help to improve blood pressure in patients with hypertension and metabolic syndrome.

NOTE

The information provided in this case study describes the results of one patient under the care of a licensed healthcare practitioner and may not be a typical response. Patients treated with blood pressure medications should be carefully monitored by their healthcare practitioner during any changes to their medication and/or dietary regimens.

Financial support for this study was provided by Metagenics, Inc. This study was conducted at the Functional Medicine Research Center (FMRC), the clinical research arm of Metagenics, Inc. Dan Lukaczer, ND, is the Director of Clinical Research at the FMRC.

†Body Mass Index (BMI) is computed by the weight (kg) divided by the square of the height (m).

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