

AYURVEDIC TREATMENT OF CHRONIC FATIGUE SYNDROME—A CASE REPORT

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Chronic fatigue syndrome (CFS) is a disorder characterized by sudden onset of severe unexplained fatigue, lasting 6 months or more.^{1,2} Associated symptoms include impairment of neurocognitive function, non-refreshing sleep, headache, arthralgias, postexertional malaise, muscle aches, and recurrent sore throat. Approximately 0.2% to 0.7% of the population in Western countries is affected. It affects over 800,000 Americans of all ages, races, socioeconomic groups, and genders.²⁻⁴ Chronic fatigue Syndrome is estimated to cost \$9.1 billion in lost productivity annually in the United States.⁴ The etiology and pathophysiology of CFS is still unknown,^{1,5} but it is known to be heterogeneous and multicausal. Major causes of CFS, include infection,⁶ immune dysregulation,^{7,8} dysautonomia,⁹ neuroendocrine dysfunction,¹⁰ and genetic disorders.¹¹ A diagnosis of CFS cannot be made on single measurements of immune, endocrine, cardiovascular, or autonomic nervous system dysfunction.^{12,13} Data suggest that people with CFS manifest changes in immune responses that fall outside normative ranges, but current research does not provide definitive evidence on whether these immune abnormalities are a cause or result of the illness. Therefore, it is still a condition of exclusion, and the diagnosis is made with a thorough history and clinical exam.

There is no specific treatment for CFS. Treatment strategies include pharmacological and non-pharmacological methods.¹⁴ However, an integrated medical and psychological approach is needed, with the aim of preventing significant secondary negative results of the illness, such as interpersonal conflicts or chronic disability. In a systematic review of the scientific literature on the various treatment methods used by Whiting et al, it was reported that cognitive behavior therapy and graded exer-

cise therapy showed positive results, but there were limited effects with immunoglobulin and hydrocortisone, indicating inconclusive evidence.¹⁵ The 4 categories that showed insufficient evidence were pharmacology, supplements, complementary and alternative medicine, and others. Overall, the authors concluded that there were methodological inadequacies in many studies and therefore recommended further research in all categories, including those that are effective.¹⁵

Ayurveda, the Indian system of medicine, is one of the oldest systems of medicine, dating back to 5000 BC.^{16,17} Ayurvedic treatment involves detoxification therapies, herbs, oil treatments, and diet and lifestyle changes. Either one or all of the treatments are chosen, based on the condition of the patient and the severity of ailment. These treatments have been shown to be safe and effective in treating many chronic ailments.¹⁸ Chronic fatigue syndrome is diagnosed in Ayurveda as deficiency of *rasa dhatu* and *ojas* and is basically treated with tonifying herbs and maintenance of proper digestive function. This article reports a case history to demonstrate a pragmatic, comprehensive approach to ayurvedic medicine in the management of a case of CFS.

The patient, a 39-year-old, female, software technical support specialist, presented with predominant symptoms of fatigue, which had been present for the past 3 years. Her other symptoms included non-refreshing sleep, tiredness, neck pain, bloating, loss of short-term memory, and irritation of the throat and associated hoarseness. Her symptoms exacerbated with minimal physical stress and did not improve after rest; instead, she observed that her symptoms were interfering more with her activities of daily living and personal life. Her medical history revealed that she was diagnosed with hypothyroidism 7 years ago and was "euthyroid" with Levothroid 50 mg once a day. No other significant past medical history was reported. Her recent bloodwork was within normal limits. Her daily routine included moderate exercise, yoga, and Indian classical dance 2 hours per week. The patient stated that she had healthy eating habits, but she had abdominal bloating and discomfort. She reported tremendous psychological stress both at work and at home. In

addition to thyroid medication, she was taking Women's Ultra Mega (GNC, Pittsburgh, Pa), Agree with Dairy (GNC), desogestrel/ethinylestradiol (Desogen, Organon, Roseland, NJ) and loratadine (Claritin, Schering-Plough, Kenilworth, NJ) for her throat as advised by her family physician. She was not taking any specific medication for CFS, however. The patient had tried acupuncture and supplements that had helped briefly, but the symptoms recurred after she discontinued treatment.

Physical examination was within normal limits, and there was no pallor, no lymphadenopathy, no notable muscle weakness, and no pedal edema. After a systematic evaluation of the patient's history and complaints, we made a presumptive diagnosis of CFS, as no other abnormality was reported or detected during her clinical and laboratory assessment and she met disease criteria established in 1994.¹⁹

The patient was then evaluated from an ayurvedic perspective and was determined to have excess *vata* and *pitta*, deficiency of *rasa* and *rakta dhātu* and poor *jatharagni* (digestive power) at the physical level. At the psychological level, her *rajas* and *tamas gunas* were out of balance.

In Ayurveda, an imbalance in the three *tridoshas* (biomaterials)—*vata*, *pitta*, and *kapha*—is believed to be the cause of many diseases. A minor disturbance in the equilibrium is overcome easily by the body, but a major imbalance results in disease because together they control and conduct all functions of the body. In addition to the *tridoshas*, the structural components of the body are made up of 7 tissues called *sapta dhatus*. They are *rasa* (essence of food or plasma), *rakta* (blood), *mamsa* (muscle tissue), *meda* (adipose tissue), *asthi* (bone), *majja* (marrow), and *shukra* (reproductive tissue). *Jatharagni* literally means the metabolic fire; it governs the entire sequence of metabolic functions in the body. Proper absorption and conversion of food into tissue building blocks (*dhatus*)²⁰ is ensured only if *jatharagni* is in a balanced state. The substance that is the ultimate refined result of digestion, metabolism, absorption, and assimilation is called *Ojas*. It has a direct influence on the nature of physical, mental, and emotional health. *Sattva* (equilibrium and serenity), *rajas* (dynamism and activity), and *tamas* (ignorance and inertia) are the three dispositions (*trigunas*) that also are evaluated to determine a person's healthy state. A typical ayurvedic diagnosis of an ailment invariably includes assessment of all the above as well by determination of the person's constitution (*prakriti*).^{17,20}

Ayurveda indicates detoxification of a person with panchakarma therapies as a preliminary step of treatment. It was deferred in this case, due to the patient's deficient condition. She was advised to take the following ayurvedic herbal medicines for 2 months:

1. Stress Guard (Goodcare Pharma): One capsule twice daily with warm milk (a proprietary blend that contains *Withania somnifera*, *Bacopa monnieri*, *Nardostachys jatamansi*, etc)

2. Shankhpushpi syrup (Shree Baidyanath Ayurved Bhawan): Two teaspoons with water (*Evolvulus alsinoides* syrup) twice daily, after breakfast and dinner.

3. Chyavanprash (gooseberry jam): Two teaspoons with milk or warm water, once a day, at 7 AM.

Diet and lifestyle advice was also part of the treatment regimen. The patient was asked to avoid all *vata*-aggravating foods like root vegetables, deep fried foods, garbanzo beans, and sodas. Fresh, warm foods and some breathing exercises (*pranayama*) were recommended. Overall, the focus of the treatment was to nourish the tissues and strengthen the mind while balancing *doshas* and digestive power. The selection of the above supplements for this purpose was based on their availability in the United States compared to other classical formulas.

To assess the clinical outcomes of this patient, a modified fatigue impact scale (MFIS),^{21,22} a 21-item questionnaire, and a sleep questionnaire were used. Data were collected at baseline and at the end of 2 months. A general health assessment questionnaire was also administered to the patient to collect her general health information. The MFIS is used frequently to evaluate fatigue in multiple sclerosis and is shown to be reliable. Three subscales, physical, cognitive, and psychosocial, can be aggregated from MFIS in addition to a total MFIS score. The total MFIS score ranges from 0 to 84. The ranges of subscale are physical—0 to 36, cognitive—0 to 40, and psychosocial—0 to 8. Higher scores indicate a greater impact of fatigue on a person's activities. The sleep questionnaire contains yes or no questions; there is no scale.

RESULTS AND DISCUSSION

At baseline, the patient reported 3-6 hours of fatigue every day, which limited her activities at home as well as at work, although not significantly. The total MFIS score was 63. Baseline values of physical, cognitive, and psychosocial subscales were, 27, 30 and 6, respectively. Although she slept for 8-9 hours per day, she always woke up fatigued and not feeling refreshed. She felt excessively sleepy during the day. Otherwise, she did not have disturbed sleep.

At the end of 2 months of treatment, the patient was experiencing fatigue for less than 3 hours per day, and it was not interfering with any of her daily activities at home or at work. She was able to go for a walk 5 times a week and had not had a major episode of fatigue in the last month. The total MFIS score dropped to 27 from 63. The physical subscale fell from 27 at baseline to 12 at the end of 2 months. The cognitive subscale dropped to 12 from 30 at baseline. The psychosocial scale scores went from 6 to 2.

The patient reported that 8 hours sleep was now refreshing, and she was not feeling sleepy during the day. She also stated that her neck pain, throat irritation, and bloating had disappeared. The patient also reported that she was able to comply with the treatment regimen up to 85%. She was asked to continue the same treatment for another 2-3 months to avoid any relapses. A follow-up phone call at the end of 3.5 months revealed that the patient was continuing to feel better. Perhaps because of the improvement experienced, her supplement intake has been irregular recently.

DISCUSSION

Chronic fatigue syndrome is a condition that requires a

comprehensive approach to treatment because its etiology is multicausal. A single drug treatment is not available. Therefore, a treatment that is global, individualized, pragmatic, and comprehensive has been proposed.²³ If necessary, even interdisciplinary interventions—treating a particular condition with more than one treatment method or system of medicine—are considered helpful to these patients.

In this case, the overall reported improvement in all the subscales could be attributed to the presence of psychotropic and adoptogenic herbs present in the supplement combinations. Stress guard, a proprietary ayurvedic formula, is primarily indicated for fatigue. The main ingredients include *Withania somnifera* (ashwagandha), *Bacopa monnieri* (brahmi), and *Nardostachys jatamansi* (jatamansi). Studies on ashwagandha indicate that it possesses anti-stress, antioxidant, immunomodulatory, and rejuvenating properties.²⁴ Similarly, brahmi is known for its anti-stress, adaptogenic, and memory-improving properties.²⁵⁻²⁷ Jatamansi is traditionally used to induce refreshing sleep and reduce anxiety and tension. Recent studies on jatamansi have indicated that it might have an antioxidant effect.²⁸ Studies on *Evolvulus alsinoides* (shankhapushpi) have shown that it exhibits antioxidant activity²⁹ and immunomodulatory effects.³⁰ *Chyavanprash* (gooseberry jam) is a *rasayana* that can be prescribed for all three *dosha* types. *Rasayanas* are a group of herbal preparations widely used in Ayurveda to improve general health.²⁹ It is traditionally used for prophylactic, curative, restorative actions in many diseases and therefore has been classified as a rejuvenator. The chief ingredient in this formula is *Embolica officinalis* (amalaki). *Chyavanprash* and amalaki have potent free radical-scavenging agents. They are also known for their immunomodulating effects.^{31,32}

CONCLUSION

The results of this case report are promising and suggest that classical ayurvedic treatments should be studied for possible efficacy in treating the symptoms of CFS. The results in this case report, however, do not prove a cause-and-effect relationship between Ayurveda treatment and the patient's improvement, which could have been the result of other factors, such as the natural course of the disease or a placebo effect. An outcome study with a larger sample size will be required to determine the effectiveness of this treatment, and randomized, controlled trials (RCTs) are needed to prove an association of Ayurvedic treatment with a positive result. A staged approach is required to evaluate Ayurvedic or other complementary and alternative medicine treatments because they are based on a complex, theoretical model of disease and complex interventions. Preliminary data collected during trials to determine effectiveness also can provide information required for designing an RCT that could include the complexities of diagnosis and treatment in Ayurvedic medicine. This case study is presented to help stimulate interest in reporting similar cases as part of the groundwork for further clinical research in this area.

References

- Lieb K, Dammann G, Berger M, Bauer J. [Chronic fatigue syndrome. Definition, diagnostic measures and therapeutic possibilities]. *Nervenarzt*. 1996;67:711-720. German.
- Evengard B, Klimas N. Chronic fatigue syndrome: probable pathogenesis and possible treatments. *Drugs*. 2002;62:2433-2446.
- Gerrity TR, Papanicolaou DA, Amsterdam JD, et al. Immunologic Aspects of Chronic Fatigue Syndrome. Report on a Research Symposium Convened by The CFIDS Association of America and Co-Sponsored by the US Centers for Disease Control and Prevention and the National Institutes of Health. *Neuroimmunomodulation*. 2004;11:351-357.
- Reynolds KJ, Vernon SD, Bouchery E, Reeves WC. The economic impact of chronic fatigue syndrome. *Cost Eff Resour Alloc*. 2004;2:4.
- Farrar DJ, Locke SE, Kantrowitz FG. Chronic fatigue syndrome. 1: Etiology and pathogenesis. *Behav Med*. 1995;21:5-16.
- Staines DR. Is chronic fatigue syndrome an autoimmune disorder of endogenous neuropeptides, exogenous infection and molecular mimicry? *Med Hypotheses*. 2004;62:646-652.
- Lyall M, Peakman M, Wessely S. A systematic review and critical evaluation of the immunology of chronic fatigue syndrome. *J Psychosom Res*. 2003;55:79-90.
- Nijs J, De Meirleir K, Meeus M, McGreggor NR, Englebienne P. Chronic fatigue syndrome: intracellular immune deregulations as a possible etiology for abnormal exercise response. *Med Hypotheses*. 2004;62:759-765.
- Naschitz JE, Yeshurun D, Rosner I. Dysautonomia in chronic fatigue syndrome: facts, hypotheses, implications. *Med Hypotheses*. 2004;62:203-206.
- Moldofsky H. Sleep, neuroimmune and neuroendocrine functions in fibromyalgia and chronic fatigue syndrome. *Adv Neuroimmunol*. 1995;5:39-56.
- Walsh CM, Zainal NZ, Middleton SJ, Paykel ES. A family history study of chronic fatigue syndrome. *Psychiatr Genet*. 2001;11:123-128.
- Cleare AJ. The HPA axis and the genesis of chronic fatigue syndrome. *Trends Endocrinol Metab*. 2004;15:55-59.
- Papanicolaou DA, Amsterdam JD, Levine S, et al. Neuroendocrine aspects of chronic fatigue syndrome. *Neuroimmunomodulation*. 2004;11:65-74.
- Singh BB, Vinjamury, SP, Singh, VJ. *Chronic Fatigue Syndrome: Integrative medicine: A Systematic Approach*. New York, NY: McGraw-Hill; 2003.
- Whiting P, Bagnall AM, Sowden AJ, et al. Interventions for the treatment and management of chronic fatigue syndrome: a systematic review. *JAMA*. 2001;286:1360-1368. Erratum in: *JAMA*. 2002;287:1401.
- Titus GW. Providing alternative health care: an ancient system for a modern age. *Adv Pract Nurs Q*. 1995;1:19-28.
- Mishra L, Singh BB, Dagenais S. Ayurveda: a historical perspective and principles of the traditional healthcare system in India. *Altern Ther Health Med*. 2001;7:36-42.
- Gogtay NJ, Bhatt HA, Dalvi SS, Kshirsagar NA. The use and safety of non-allopathic Indian medicines. *Drug Saf*. 2002;25:1005-1019.
- Mukuda K, Straus SE, Hickie I, et al. The chronic fatigue syndrome: a comprehensive approach to its definition and study. International Chronic Fatigue Syndrome Study Group. *Ann Intern Med*. 1994;121:953-959.
- Mishra L, Singh BB, Dagenais S. Healthcare and disease management in Ayurveda. *Altern Ther Health Med*. 2001;7:44-50.
- Flachenecker P, Kumpfel T, Kallmann B, et al. Fatigue in multiple sclerosis: a comparison of different rating scales and correlation to clinical parameters. *Mult Scler*. 2002;8:523-526.
- Kos D, Kerckhofs E, Nagels G, et al. Assessing fatigue in multiple sclerosis: Dutch modified fatigue impact scale. *Acta Neurol Belg*. 2003;103:185-191.
- Bertolin Guillen JM, Bedate Villar J. [Therapeutic guidelines in chronic fatigue syndrome]. *Actas Luso Esp Neurol Psiquiatr Cienc Afines*. 1994;22:127-130. Spanish.
- Mishra LC, Singh BB, Dagenais S. Scientific basis for the therapeutic use of *Withania somnifera* (ashwagandha): a review. *Altern Med Rev*. 2000;5:334-346.
- Chowdhuri DK, Parmar D, Kakkar P, et al. Antistress effects of bacosides of *Bacopa monnieri*: modulation of Hsp70 expression, superoxide dismutase and cytochrome P450 activity in rat brain. *Phytother Res*. 2002;16:639-645.
- Rai D, Bhatia G, Palit G, et al. Adaptogenic effect of *Bacopa monniera* (Brahmi). *Pharmacol Biochem Behav*. 2003;75:823-830.
- Roodenrys S, Booth D, Bulzomi S, et al. Chronic effects of Brahmi (*Bacopa monnieri*) on human memory. *Neuropsychopharmacology*. 2002;27:279-281.
- Salim S, Ahmad M, Zafar KS, Ahmad AS, Islam F. Protective effect of *Nardostachys jatamansi* in rat cerebral ischemia. *Pharmacol Biochem Behav*. 2003;74:481-486.
- Auddy B, Ferreira M, Blasina F, et al. Screening of antioxidant activity of three Indian medicinal plants, traditionally used for the management of neurodegenerative diseases. *J Ethnopharmacol*. 2003;84:131-138.
- Ganju L, Karan D, Chanda S, et al. Immunomodulatory effects of agents of plant origin. *Biomed Pharmacother*. 2003;57:296-300.
- Chaudhuri RK. Emblica cascading antioxidant: a novel natural skin care ingredient. *Skin Pharmacol Appl Skin Physiol*. 2002;15:374-380.
- Jose JK, Kuttan G, Kuttan R. Antitumour activity of *Embolica officinalis*. *J Ethnopharmacol*. 2001;75:65-69.