

Case Reports is a regularly featured column meant to highlight the clinical applications of alternative or integrative therapies as they are implemented in patient care. Preference will be given to cases in which diagnosis, treatment, and outcomes are clearly defined.

BRIEF CASE REPORTS OF MEDICALLY SUPERVISED, WATER-ONLY FASTING ASSOCIATED WITH REMISSION OF AUTOIMMUNE DISEASE

Joel Fuhrman, MD, Barbara Sarter, PhD, RN, FNP, and David J. Calabro, DC

Joel Fuhrman is a board-certified family physician affiliated with Hunterdon Medical Center in Flemington, NJ. **Barbara Sarter** is an associate professor in the Department of Nursing at the University of Southern California in Los Angeles. **David J. Calabro** is a chiropractor in private practice in Linwood, NJ.

Medically supervised, water-only fasting is known to be an effective means of lessening the symptoms of autoimmune illnesses; in many cases, remission of the disease occurs.¹ The challenge, however, is to maintain the benefits of the fast after reintroduction of foods. Those studies that have shown no long-term benefit to fasting have allowed unrestricted food intake after the fasting period.²⁻⁴ A few studies, however, have demonstrated long-term benefit from adherence to a vegan or lacto-vegan diet after fasting.⁵⁻⁸ In our practice, we admit motivated patients suffering from autoimmune diseases to a facility where they are offered intensive education and support in vegan eating during a medically supervised, water-only fast that varies in length from 1 to 3 weeks. Patients then maintain the vegan diet after the fast. We describe 6 representative cases below.

A recent meta-analysis⁹ of 31 scientific reports on fasting followed by vegetarian diet in patients with rheumatoid arthritis concluded that this regimen may be useful in the treatment of rheumatoid arthritis. Of the 31 studies identified, only 4¹⁰⁻¹³ were found to be controlled clinical trials that reported follow-up data for at least 3 months after initiation of treatment. The results of these 4 studies were pooled, and an effect size (*d*) and its standard deviation for each study was calculated, demonstrating a significant beneficial effect of fasting followed by vegetarian diet ($P < .001$, $r = .38$, $d = .83$). A separate pooling of the 2 randomized, controlled studies showed a significant improve-

ment in the treatment groups ($P < .01$, $r = .28$, $d = .58$). For most of the studies analyzed, the criterion for clinical improvement was a visual analog pain scale.

CASE REPORTS

We report here 6 cases in which medically supervised, water-only fasting followed by a vegan diet resulted in reduction in pain and inflammatory markers in patients with autoimmune illnesses. These cases indicate the therapeutic potential of this approach and a need for further clinical research.

Materials and Methods

All patients were given a carefully designed vegan diet before they came to a treatment facility to fast. This was a high-nutrient-density diet consisting of fresh fruits, vegetables, beans, and nuts. All antirheumatic medications were tapered and discontinued before the fast. Baseline serological studies included a basic chemistry panel to assure adequate renal and hepatic function before fasting.

Patients were admitted to a medically supervised site for the fasting period. Informed consent was obtained, and patients understood that they could stop the fast at any time. Patients were instructed to drink at least 1 quart of distilled spring water per day and to minimize physical or mental exertion. Daily vital signs were recorded including weight. A chemistry panel was obtained once per week and more often as needed.

Patients fasted from 1 to 3 weeks. However, fasts were broken earlier if there were indications of electrolyte deficiency either from results of laboratory work or from symptoms. Fasts were broken by a vegetable and fruit diet. The first day of refeeding consisted of small portions of light fruits and vegetables every 2 hours. The diet was then advanced gradually to include other fruits and vegetables, then to a normal caloric intake of a natural food diet as described above. All patients were discharged after a minimum of 4 days of refeeding. They

Reprint requests: InnoVision Communications, 169 Saxony Road, Suite 104, Encinitas, CA 92024; phone, (866) 828-2962 or (760) 633-3910; e-mail, alternative.therapies@innerdoorway.com.

Continued on page 140

were followed with an outpatient visit 2 weeks later and then with visits at bimonthly intervals.

Case 1: Rheumatoid Arthritis

A 61-year-old man was diagnosed with rheumatoid arthritis in 1990. At his first consultation, he reported pain and stiffness in all extremities, fatigue, and headaches. He also experienced episodes of autoimmune hemorrhagic conjunctivitis. Medications included 100 mg cyclosporin and 5 mg prednisone daily with only mild improvement of symptoms.

One month after stopping his medications, he began to fast. His initial weight was 71.8 kg and his blood pressure was 110/60 mm Hg. Within 2 days of fasting, his joint symptoms began to subside. After a week of fasting, he was without pain and his mobility had returned. On the eighth day, he experienced a brief recurrence of conjunctivitis. He fasted for 17 days. Renal and hepatic function as well as electrolytes were stable throughout the fast, and his erythrocyte sedimentation rate returned to normal. After the fast, he had no residual symptoms. His weight was 63.4 kg and blood pressure was 90/60 mm Hg. He continued to do well and was free of symptoms at follow-up visits.

Case 2: Mixed Connective-Tissue Disease

A 38-year-old woman was diagnosed in 1996 with mixed connective-tissue disease. Her signs and symptoms included severe joint pains, facial edema, weakness and fatigue, tachycardia, chills, myalgia, and photosensitivity. She was taking hydroxychloroquine, tramadol, levothyroxine, cetirizine, and prednisone.

Before fasting, she was weaned off all medications except her thyroid replacement, which was reduced during the fast, then raised to her normal dose after the fast. Her weight was 68.1 kg and her blood pressure was 115/80 mm Hg at the start of the fast. At the onset of her fast, she had increased hip pain and discomfort as well as muscle weakness. She also had an overall ill feeling during the first week of fasting. By the tenth day she was feeling better, and after 21 days of fasting she had no further complaints. Her weight was down to 58.8 kg and her blood pressure was 80/60 mm Hg. Renal and hepatic function as well as electrolytes were stable throughout the fast. At follow-up, she remained free of medication with minimal symptoms.

Case 3: Fibromyalgia

A 46-year-old woman diagnosed with fibromyalgia presented with a history of poor sleep and pain, especially in her right arm, back and neck, and both legs. She could not sustain any activity for more than 1 hour. Medications included nefazodone, nortriptyline, propoxyphene, ibuprofen, and levothyroxine.

Her weight at the onset of the fast was 67.2 kg and blood pressure was 120/80 mm Hg. Her fast lasted 24 days, at the end of which she was symptom free. At discharge, her weight was 57.9 kg and blood pressure was 115/85 mm Hg. Renal and hepatic function as well as electrolytes were stable throughout the fast. At the follow-up visit 1 month later, she was still free of symptoms.

Case 4: Systemic Lupus Erythematosus

A 45-year-old woman presented with a history of lupus. Her symptoms included joint pain and skin rash. She was taking 25 mg of prednisone and 5 mg of hydroxychloroquine daily without adequate resolution of her chest pain. She was weaned off her medications over a 2-month period and was medication free 2 weeks before the fast. Her weight at the start of the fast was 58.8 kg and blood pressure was 120/75 mm Hg. Through the first 3 days of the fast, she experienced mild discomfort, poor sleep, and nausea. By the fourth day, the patient was feeling significantly better, with no complaints and no joint pains. The fast was broken on her seventh day because of increased weakness and mild tachycardia. Her weight was down to 55 kg and blood pressure was 110/80 mm Hg. Adrenal suppression was a concern due to the prolonged use of prednisone. Electrolytes remained normal. She remained symptom free for 1 year,

when her symptoms began to recur. She underwent a second 7-day fast, after which she had no symptoms. She is presently in remission.

Case 5: Rheumatoid Arthritis

A 40-year-old woman was diagnosed with rheumatoid arthritis in March 1999. After 2 weeks of prednisone therapy, she decided to undergo a medically supervised, water-only fast. On her initial consultation, she complained of pain in all joints, especially her knees.

The patient's weight at the start of the fast was 71.8 kg, and her blood pressure was 125/100 mm Hg. In the first few days of her fast, she experienced a noticeable increase in pain in her spine, shoulders, and neck. Her pain decreased as she fasted, and by day 10, there was no further joint pain. The patient fasted for 12 days. Renal and hepatic function as well as electrolytes were stable throughout the fast. Her weight went down to 65 kg and her blood pressure to 110/70 mm Hg. Her symptoms have not recurred.

Case 6: Rheumatoid Arthritis

A 46-year-old woman diagnosed with rheumatoid arthritis consulted us for a nutritional approach to treatment. She reported pain in her fingers, wrists, shoulders, and knees. She had no joint deformities. She was being treated with irbesartan and amlodipine for hypertension, and celecoxib and rofecoxib for the arthritis. Her blood pressure was 170/80 mm Hg on the above medications, and her weight was 106.6 kg at initial presentation.

The woman was weaned off all medication and lost 9.1 kg during 8 weeks of dietary intervention before beginning the fast. At the start of the fast, her weight was 94.5 kg, and her blood pressure without medication was 130/78 mm Hg. Within 4 days of the fast, her joint pain decreased. Her symptoms continued to decrease throughout the fast. Her blood pressure also slowly continued to decrease. Her electrolytes were stable throughout the fast, except for potassium, which dropped to 3.4 mmol/L. On day 17 she began oral potassium gluconate (500 mg) and continued taking it for 3 days, after which her potassium level was within the normal range at 4.2 mmol/L.

She fasted for 24 days and had no residual symptoms. Her weight dropped to 84.3 kg. As a secondary benefit, her blood pressure normalized to 110/80 mm Hg and she stopped taking her blood pressure medication. She remains in remission.

COMMENT

Dietary modification alone sometimes reduces symptoms in patients with autoimmune diseases, but in most cases, as represented by those described above, dietary changes alone are not sufficient to completely resolve symptoms. After fasting from 7 to 24 days, these patients were free of symptoms, and their symptoms did not recur when they resumed eating a carefully

designed vegan diet. Remission was confirmed at subsequent contacts months and sometimes years later.

We do not feel that commonly proposed mechanisms, such as changes in gut permeability and intestinal flora, adequately explain the clinical course of remission punctuated by brief exacerbations that we routinely observe during water-only fasting. We believe additional, poorly studied mechanisms account for fasting's effectiveness in improving symptoms and inducing remissions. These mechanisms include a reduction in excessive lymphocyte activity and the mobilization and elimination of noxious stimuli from fat and tissue stores. Retained antibody-antigen complexes may also be involved. Though fibromyalgia is not classified as an autoimmune disease, it was included in these case reports because it demonstrated the same positive response to fasting as did rheumatoid arthritis, lupus, and mixed connective-tissue disease. Maintaining a nutrient-dense, vegan diet of unrefined plant foods appears to be necessary after the fast to prevent the recurrence of symptoms and inflammatory activity.

CONCLUSION

These cases demonstrate the need for further research in the benefits of fasting. Under medical supervision, this therapy is safe and results in only transient side effects. Eating a vegan diet before fasting often resulted in partial improvement of symptoms, enabling patients to reduce their medications before the fast. Additional studies of fasting may explain how this treatment induces remission and may clarify our understanding of the pathophysiology of rheumatoid arthritis and other autoimmune illnesses.

References

1. Palmblad J, Hafstrom I, Ringertz B. Antirheumatic effects of fasting. *Rheum Dis Clin North Am.* 1991;17(2):351-362.
2. Lithell H, Bruce A, Gustafsson IB, et al. A fasting and vegetarian diet treatment trial on chronic inflammatory disorders. *Acta Derm Venereol (Stockh).* 1983;63:397-403.
3. Skoldstam L, Magnusson KE. Fasting, intestinal permeability, and rheumatoid arthritis. *Rheum Dis Clin North Am.* 1991;17(2):363-371.
4. Sundqvist T, Lindstrom F, Magnusson KE, Skoldstam L, Stjernstrom I, Tagesson C. Influence of fasting on intestinal permeability and disease activity in patients with rheumatoid arthritis. *Scand J Rheumatol.* 1982;11(1):33-38.
5. Peltonen R, Kjeldsen-Kragh J, Haugen M, et al. Changes of faecal flora in rheumatoid arthritis during fasting and one-year vegetarian diet. *Br J Rheumatol.* 1994;33(7):638-643.
6. Nenonen MT, Helve TA, Rauma AL, Hanninen O. Uncooked, lactobacilli-rich, vegan food and rheumatoid arthritis. *Br J Rheumatol.* 1998;37(3):274-281.
7. Jajic Z, Vuksic D, Jajic I. Effect of nutrition on the clinical picture of rheumatoid arthritis. *Reumatizam.* 1998;46(1):27-30.
8. Haugen MA, Kjeldsen-Kragh J, Bjerve KS, et al. Changes in plasma phospholipid fatty acids and their relationship to disease activity in rheumatoid arthritis patients treated with a vegetarian diet. *Br J Nutr.* 1994;72(4):555-566.
9. Muller H, de Toledo FW, Resch K-L. Fasting followed by vegetarian diet in patients with rheumatoid arthritis: a systematic review. *Scand J Rheumatol.* 2001;30(1):1-10.
10. Kjeldsen-Kragh J. Rheumatoid arthritis treated with vegetarian diets. *Am J Clin Nutr.* 1999;70(suppl 3):594S-600S.
11. Skoldstam L, Larsson L, Lindstrom FD. Effect of fasting and lactovegetarian diet on rheumatoid arthritis. *Scand J Rheumatol.* 1979;8:249-255.
12. Skoldstam L. Fasting and vegan diet in rheumatoid arthritis. *Scand J Rheumatol.* 1986;15:219-221.
13. Lindberg E. Konnen Ernahrungsfaktoren die chronische polyarthritis beeinflussen? *Z Physiother.* 1973;25:119-129.