



AMERICAN COLLEGE OF
RHEUMATOLOGY

*57th
Annual Meeting*

SCIENTIFIC ABSTRACTS



AMERICAN COLLEGE
OF RHEUMATOLOGY
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TREATMENT OF OSTEOARTHRITIS WITH PULSED ELECTROMAGNETIC FIELDS.

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A device which generates pulsed electromagnetic fields (PEMF) has been studied in the therapy of osteoarthritis (OA). It consists of three components, a magnetic field generator, an electronic interface cable and a segmented toroid coil. It produces a pulsed DC elliptical magnetic field with the following energy characteristics: power amplitude 0.28 W; 5 to 24 Hz; magnetic flux density 20 G; quasi-rectangular abruptly rising and falling wave form; duty cycle of up to 250 ms and pulse bursts of 12 to 24, depending on the frequency.

Initial pilot double-blind trials demonstrated efficacy in OA. In a randomized, double-blind, placebo controlled trial of PEMF therapy of OA of the knee or cervical spine, 84 actively treated and 83 placebo treated patients were each given 18 thirty minute treatments over 3-4 weeks. The average age, weight, duration of symptoms (all >1 yr), x-ray grade of severity of the OA, and use of previous treatment modalities were similar in the two groups. Observations, made at baseline, midpoint, end of treatment and one month later, included severity of pain (using a 10 cm analog scale); difficulty with ADL, severity of tenderness and pain on passive joint motion, and physician's global assessment of response, all estimated on a scale of 0-3. Mean values were similar for placebo and treated groups at baseline. By the end of treatment, the means of the treated group always showed greater improvement.

Observation	Changes from baseline (means):					
	End of Bx			1 Month F.U.		
	Bx	Plac.	p	Bx	Plac.	p
Pain (analog scale)	27.2	14.0	0.005	24.8	11.9	0.02
Tenderness	0.77	0.48	0.07	0.73	0.21	<0.01
Pain on motion	0.70	0.41	0.02	0.78	0.16	<0.001
Global Assessment	1.66	1.39	0.1	1.57	1.23	0.08

Patients with OA of other peripheral joints and the lumbar spine, treated in an open-labelled study, also responded favorably. No side effects have been observed. Additional studies are being conducted to determine the duration of response and the spectrum of effectiveness of this form of therapy. (Supported by Bio-Magnetic Therapy Systems, Inc.)

Drs. Bollet and Markoff are officers of Bio-Magnetic Therapy Systems, Inc. Dr. Markoff is principal stockholder.

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