

Pneumatic Vest Relieves Pain From Discopathy

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PHILADELPHIA — A pneumatic vest was more effective than a conventional back brace for relieving back and leg pain in patients with discopathy in a controlled study with 36 patients followed for 1 year.

Patients treated with the Orthotrac pneumatic vest plus conventional, conservative therapy also showed a trend toward improved function compared with

patients treated with conservative therapy and an EZ form brace, John Triano, D.C., Ph.D., said at the annual meeting of the North American Spine Society.

The rationale behind the pneumatic vest is that it creates an axial load that reduces the cross-section dimensions of the spinal canal.

“The hypothesis is that if you change the internal pressure [in the spinal canal], you may be able to reduce symptoms,” said Dr. Triano, director of the chiropractic di-

vision at the Texas Back Institute in Plano.

The Orthotrac pneumatic vest has been approved by the Food and Drug Administration and is marketed by Orthofix, which sponsored the study. Neither Dr. Triano nor his associates in the study have a financial relationship with Orthofix.

The study began with 62 eligible patients, aged 21-55 years, who had back pain and radiating leg pain secondary to discopathy despite 4 weeks of standard, conservative treatment. Of these, 21 opted for

surgical management and 5 withdrew from the study. The remaining 36 were randomized to treatment with either the pneumatic vest or a form brace. The devices were prescribed for use in 30-minute intervals four times a day.

Despite randomization, at baseline patients in the vest group had an average pain score of 59.6 on a visual analog scale, compared with an average score of 42.4 among the patients in the form-brace group.

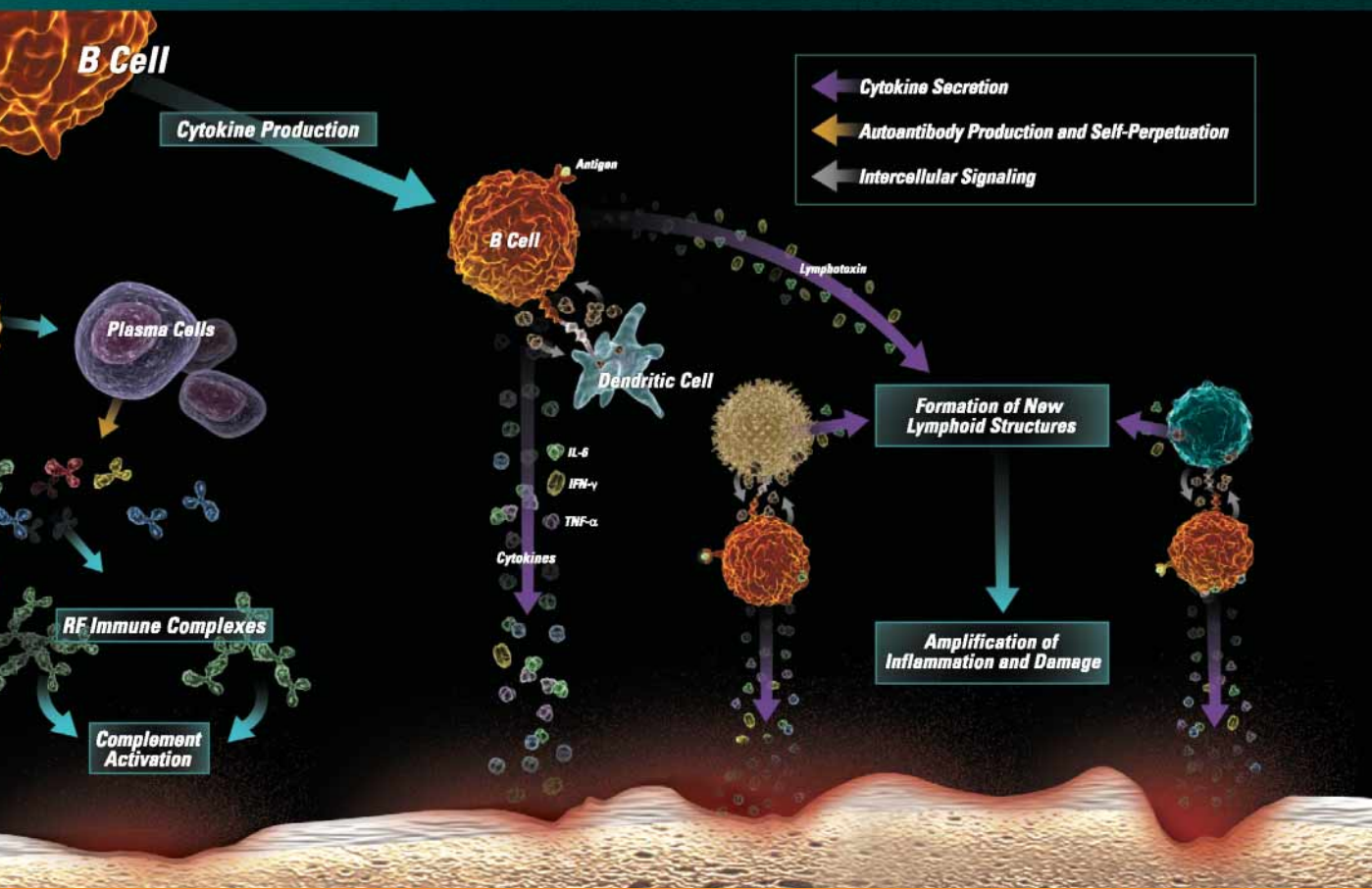
The biggest change in pain score was seen during the first 12 weeks of treatment. The average score fell by about 39 units in the vest group compared with an average decline of about 15 units in the brace group.

The difference in pain relief was maintained through a year of follow-up. After a year of treatment, the average pain level had dropped by 40 units compared with baseline in the vest group, and by 19 units in the brace group, a statistically significant difference, said Dr. Triano.

Patients treated with the pneumatic vest also had significant improvements in their mental health and energy/fatigue scores, measured using the short form-36. ■

CHANGING THE WAY WE SEE RA

IN RHEUMATOID ARTHRITIS



AUTOREACTIVE B CELLS PRODUCE AUTOANTIBODIES THAT MAY HELP DRIVE THE DISEASE PROCESS IN RA^{3,5,10,11}

B cells produce autoantibodies such as RF, anti-CCP, anti-GPI, and anti-RA33. RF immune complexes within the synovium may

- activate the complement system and stimulate an immune response^{3,10}
- bind to, and activate, macrophages in the synovium¹¹

Macrophages activated by immune complexes produce proinflammatory cytokines that perpetuate inflammation and joint destruction.¹¹

ACTIVATED B CELLS MAY PRODUCE CYTOKINES KNOWN TO PROMOTE INFLAMMATION AND JOINT DAMAGE IN RA^{3,4,6,12}

B cells may be activated to produce cytokines such as TNF- α , IL-6, and lymphotoxin in a variety of ways:

- antigen binding to the B-cell receptor^{4,6}
- binding of the costimulatory ligand found on activated T cells, macrophages, and dendritic cells to the costimulatory receptor on B cells^{4,5,12}
- exposure of B cells to cytokines produced by other cells⁴

B-cell-produced lymphotoxin may also indirectly perpetuate RA by promoting the formation of new tertiary lymphoid structures in the synovium.⁹

The increased understanding of the potential roles of B cells may provide further insight into the pathogenesis of this systemic autoimmune disease and ultimately change the way we see RA.



An MRI shows disk herniation without Orthotrac unloading.



With Orthotrac unloading, the difference in space is about 1 mm, usually enough.