

FAST Experience Offers Exercises for Knee OA

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VIENNA — While practice guidelines emphatically agree that physical exercise is a crucial element of knee osteoarthritis management, no expert consensus exists regarding how best to deliver such treatment.

Given the lack of specific recommendations, it's particularly instructive to consider the lessons offered by one landmark study in the field: the Fitness Arthritis and Seniors Trial (FAST), Leena Sharma, M.D., said at the annual European Congress of Rheumatology.

FAST stands out in a number of ways, not least that the 18-month duration of the exercise interventions was unusually long compared with other studies in this area—and altogether fitting given that exercise is

The aerobic exercise intervention entailed three 1-hour workouts per week. Each began with a 10-minute warmup involving slow walking and flexibility stretches. This was followed by 40 minutes of walking at 50%-70% of heart rate reserve as determined in an exercise stress test, then a 10-minute cool-down. A more practical alternative to the stress test is to have patients rely upon the positive talk test or aim for a target heart rate equal to 50%-75% of 220 minus their age, Dr. Sharma said.

During disease flare-ups, short rest periods could be interspersed within the workout sessions.

Resistance training in FAST also involved three hour-long sessions per week. Patients performed two sets of 12 repetitions of nine exercises working the upper and lower extremities. Dumbbells and cuff weights were used to increase resistance. Patients began using very light weights and gradually increased them so long as they could complete two sets of 12 repetitions.

Unlike in the controlled setting of FAST, however, in clinical practice an exercise prescription is not an either/or matter of aerobics or strengthening. As emphasized in the 2003 EULAR guidelines and the more recent MOVE consensus recommendations by a multidisciplinary British expert panel (Rheumatology 2005;44:67-73), the exercise prescription for patients with osteoarthritis should include both aerobic and resistance training tailored to the individual, Dr. Sharma noted. ■



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DR. SHARMA

today presented to osteoarthritis patients as a lifelong intervention, noted Dr. Sharma of Northwestern University, Chicago.

In addition, FAST's primary end point was highly clinically relevant: prevention of new disability in activities of daily living, such as bathing, dressing, and moving from bed to chair. The adjusted relative risk of developing such disability was reduced by 47% in the aerobic exercise group compared with controls, and by 40% in those randomized to resistance exercise (Arch. Intern. Med. 2001;161:2309-16).

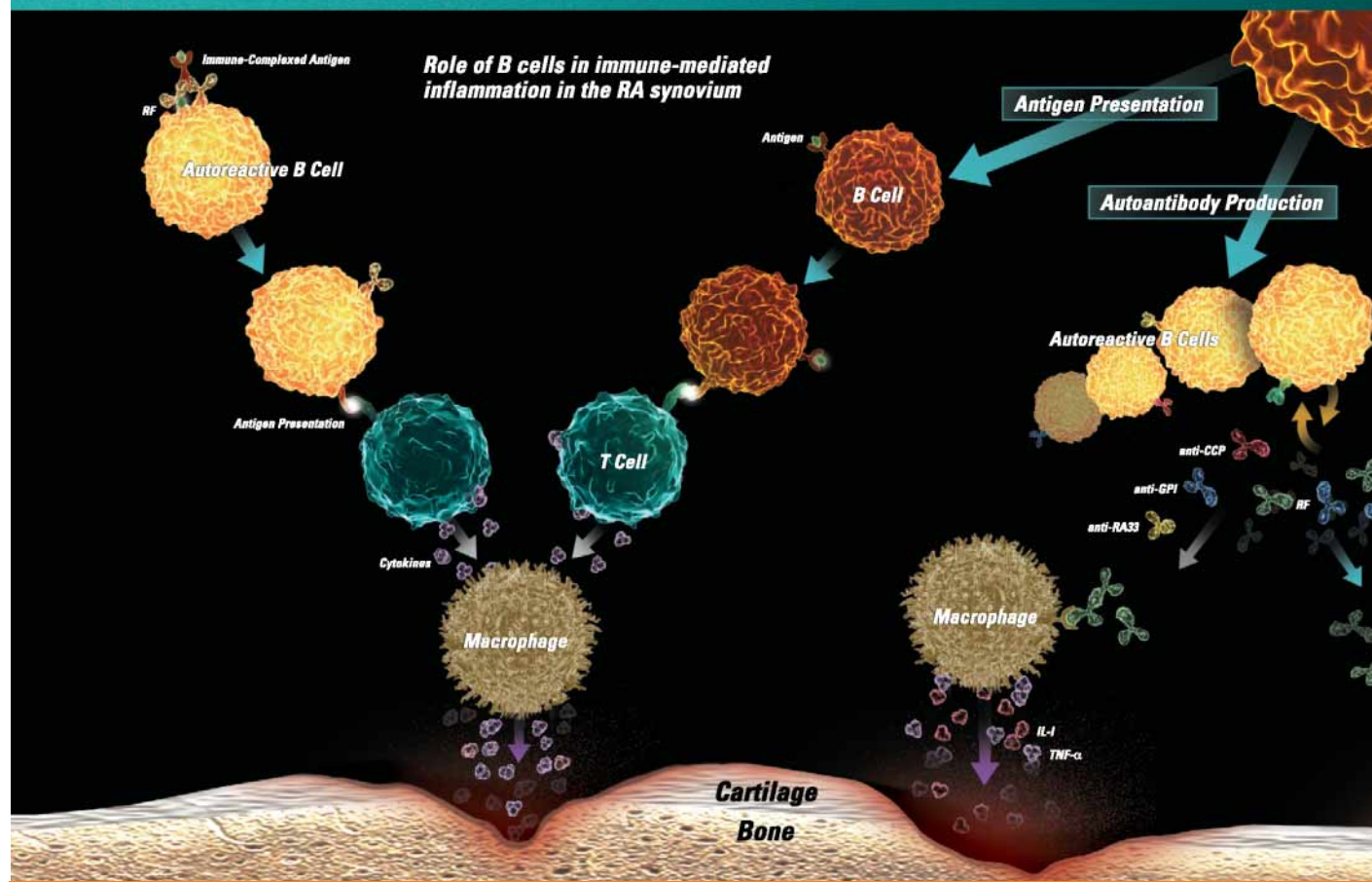
"That's a very big result. And I think that the exercise programs used in FAST are imminently doable by most people with knee osteoarthritis," the rheumatologist added.

FAST was a two-center, single-blind, randomized trial involving 439 community-dwelling patients with symptomatic knee osteoarthritis. Participants were assigned to one of three groups: aerobic exercise, strength training, or a control arm featuring an 18-month health education and support program. Both exercise arms began with a 3-month facility-based supervised program followed by a 15-month home-based program.

"There was a lot of contact—and this is crucial for osteoarthritis management," Dr. Sharma stressed. Indeed, the exercise leader visited patients at home on four occasions and phoned them six times during months 4-6, talked with them on the phone every 3 weeks during months 7-9, and talked with them monthly thereafter.

Participants kept exercise logs during the 18 months. Adherence was defined as number of exercise sessions completed divided by the number prescribed. Dr. Sharma is convinced this played a key role in the low study dropout rates—9.8% in the resistance exercise arm, 13.6% with the aerobic program—and that log-keeping also boosts compliance in routine clinical practice.

THREE CRITICAL ROLES OF B CELLS



Thirty years ago, B cells were considered a significant contributing factor in the pathophysiology of RA because of the disease's association with polyclonal B-cell activation and the presence of autoantibodies, such as rheumatoid factor (RF), and immune complexes in the joint.^{1,2} However, for much of the past 20 years, RA has mainly been considered as a T-cell mediated disease.¹ Only recently has new evidence rekindled strong interest in B cells and their important roles in the pathogenesis of RA.³

Current findings highlight 3 critical pathways by which B cells may initiate and perpetuate the inflammatory processes of RA: as highly efficient antigen-presenting cells,^{3,4} as producers of autoantibodies,⁵ and as producers of proinflammatory cytokines.^{3,4,6}

AS HIGHLY EFFICIENT ANTIGEN-PRESENTING CELLS, B CELLS MAY CONTRIBUTE SIGNIFICANTLY TO T-CELL RESPONSES IN RA.^{3,5,7-9}

- B cells may provide both signals needed to activate T cells^{3,4,7}
- RF-producing, autoreactive B cells may activate a wide range of T cells by presenting a variety of antigens to antigen-specific T cells⁸

B-cell-activated T cells produce proinflammatory cytokines that directly and indirectly perpetuate inflammation and joint destruction.⁹

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