

IN BRIEF

OSTEOPOROSIS**Romosozumab versus teriparatide**

The effect of two bone-forming agents — the anti-sclerostin antibody romosozumab and the recombinant PTH teriparatide — were compared in an open-label, randomized phase III study involving 436 women with postmenopausal osteoporosis who had been receiving bisphosphonate therapy. Change from baseline in total hip areal bone mineral density through 12 months was higher in patients who received romosozumab 210 mg once monthly compared with those treated with teriparatide 20 µg once daily (2.6% versus -0.6%).

ORIGINAL ARTICLE Langdahl, B. L. *et al.* Romosozumab (sclerostin monoclonal antibody) versus teriparatide in postmenopausal women with osteoporosis transitioning from oral bisphosphonate therapy: a randomised, open-label, phase 3 trial. *Lancet* [http://dx.doi.org/10.1016/S0140-6736\(17\)31613-6](http://dx.doi.org/10.1016/S0140-6736(17)31613-6) (2017)

RHEUMATOID ARTHRITIS**ACPA-specific synovial immunophenotypes**

In a prospective study of 123 patients with rheumatoid arthritis, synovial tissue from anti-citrullinated protein antibody (ACPA)-positive patients had higher numbers of CD19⁺ B cells as well as CD3⁺ and CD8⁺ T cells compared with tissue from ACPA-negative patients. Furthermore, ACPA-positive patients had higher numbers of lymphoid aggregates of CD19⁺ B cells and increased serum levels of CXCL13-chemokine ligand 13. Synovial tissue immunophenotype was also associated with radiographic erosions and clinical response to DMARD therapy.

ORIGINAL ARTICLE Orr, C. *et al.* Synovial immunophenotype and anti-citrullinated protein antibodies in RA patients: relationship to treatment response and radiological prognosis. *Arthritis Rheumatol.* <http://dx.doi.org/10.1002/art.40218> (2017)

OSTEOARTHRITIS**Matrix turnover linked to dietary weight loss**

A *post hoc* analysis of the IDEA trial, a prospective, randomized trial involving overweight and obese patients aged ≥55 years with osteoarthritis, reveals that serum markers of matrix metalloproteinase-mediated type I collagen degradation are lower among patients undergoing diet-induced weight loss, with or without exercise, at 18 months than in patients undertaking exercise only. No changes in markers of type II collagen degradation were observed in blood samples from patients in any of the intervention groups (429 patients in total).

ORIGINAL ARTICLE Loeser, R. F. *et al.* Effects of dietary weight loss with and without exercise on interstitial matrix turnover and tissue inflammation biomarkers in adults with knee osteoarthritis: the Intensive Diet and Exercise for Arthritis trial (IDEA). *Osteoarthritis Cartilage* <http://dx.doi.org/10.1016/j.joca.2017.07.015> (2017)

EXPERIMENTAL ARTHRITIS**PUMA reduces inflammation in arthritic joints**

Gene therapy with PUMA (also known as BBC3), a pro-apoptotic gene encoding BCL2-binding component 3, has been hampered by poor gene-delivery efficiency. A new study shows that conjugating human adenovirus type 5 (HAAdV5) to a baculovirus vector expressing CAR on its envelope (BV^{CAR}) improves transduction of PUMA to fibroblast-like synoviocytes and results in rapid cell death. In rats with adjuvant-induced arthritis, intra-articular injection of BV^{CAR}HAAdV5-PUMA reduced joint inflammation, damage and bone loss, and improved joint functionality, as compared with rats that received control vectors.

ORIGINAL ARTICLE Hong, S.-S. *et al.* PUMA gene delivery to synoviocytes reduces inflammation and degeneration of arthritic joints. *Nat. Commun.* <http://dx.doi.org/10.1038/s41467-017-00142-1> (2017)

CORRECTION**Matrix turnover linked to dietary weight loss***Dario Ummarino**Nature Reviews Rheumatology* 13, 512 (2017)

In the version of this Research Highlight initially published online, serum markers of matrix metalloproteinase-mediated type I collagen degradation were incorrectly said to be higher among patients undergoing diet-induced weight loss, with or without exercise, at 18 months than in patients undertaking exercise only, when these serum markers are actually lower among these patients than in patients undertaking exercise only. This error has been corrected in the online and Print version of the Research Highlight.