

1 **SUPPLEMENTAL METHODS**

2 **MRI parameters**

3 Pulse sequences included coronal, T1-weighted, 3-dimensional (3D) gradient-echo (flip angle  
4 65°, repetition time [TR] 35 milliseconds, echo time [TE] 16 milliseconds, field of view 120 mm,  
5 matrix 160 × 192, slice thickness 0.6 mm, giving a voxel resolution of 750 μm × 625 μm × 600  
6 μm; one excitation was averaged), coronal 2D short-tau inversion recovery (STIR) (inversion  
7 time 85 milliseconds, TR 1520-1960 milliseconds, TE 24 milliseconds, field of view 120 mm,  
8 matrix 144 × 192, slice thickness 3.0 mm, with an interslice gap of 0.3 mm, giving a voxel  
9 resolution of 833 μm × 625 μm × 3000 μm; 2 excitations were averaged), and axial 2D STIR  
10 (inversion time 85 milliseconds, TR 1680-2400 milliseconds, TE 24 milliseconds, field of view  
11 120 mm, matrix 144 × 192, slice thickness 3.0 mm, with an interslice gap of 0.3 mm, giving a  
12 voxel resolution of 833 μm × 625 μm × 3000 μm; 2 excitations were averaged).

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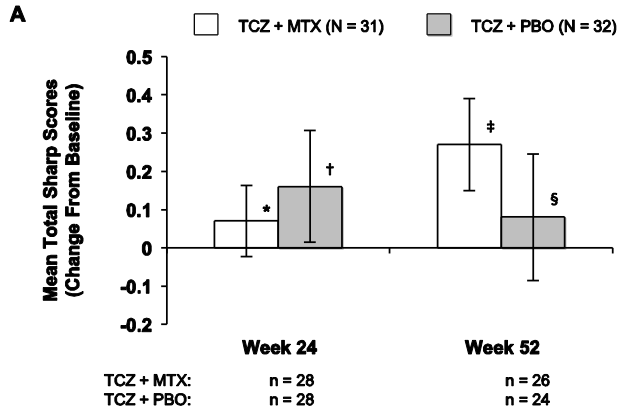
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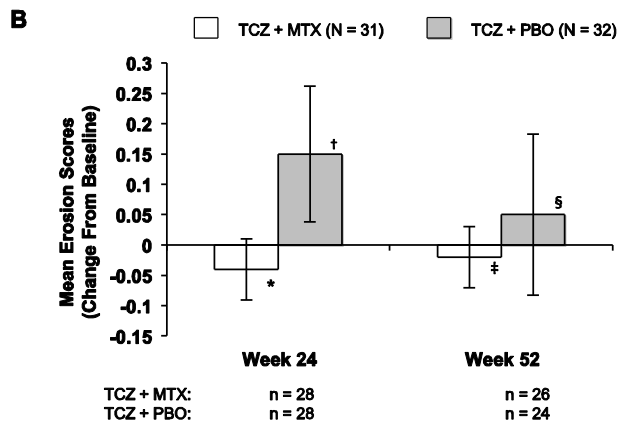
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1 **SUPPLEMENTAL FIGURES**

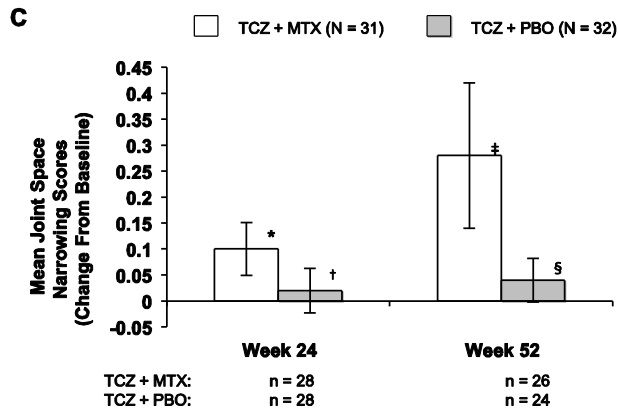
2 **Supplemental Figure 1.** Changes in radiographic Genant-modified Total Sharp Scores in  
3 patients taking tocilizumab (TCZ) 8 mg/kg plus methotrexate (MTX) or placebo (PBO) plus  
4 MTX. (A) Mean change from baseline in Total Sharp Scores at weeks 24 and 52. (B) Mean  
5 change from baseline in erosion scores at weeks 24 and 52. (C) Mean change from baseline in  
6 joint space narrowing scores at weeks 24 and 52. Error bars represent standard error of the mean  
7 | (SEM).



\*  $P = 0.6172$ ; †  $P = 0.3430$ ; ‡  $P = 0.0434$ ; §  $P = 0.3484$  when compared with baseline.



\*  $P = 0.7729$ ; †  $P = 0.2402$ ; ‡  $P = 0.9900$ ; §  $P = 0.4131$  when compared with baseline.



\*  $P = 0.0313$ ; †  $P = 0.8750$ ; ‡  $P = 0.0234$ ; §  $P = 0.7500$  when compared with baseline.