

TENDERNESS IS NOT A SIGN OF INFLAMMATION IN RHEUMATOID ARTHRITIS, PSORIATIC ARTHRITIS OR OSTEOARTHRITIS

Irina Gessl¹, Mihaela Popescu², Victoria Schimpl¹, Gabriela Supp¹, Martina Durechova¹, Miriam Gärtner, Michaela Loiskandl¹, Paul Studenic¹, Michael Zauner¹, Josef Smolen¹, Daniel Aletaha¹, Peter Mandl¹

¹ Div of Rheumatology, Medical University of Vienna, Vienna, Austria

² Div. of Rheumatology, Université de Montréal, Montreal, Canada

Background

In inflammatory joint diseases, joint swelling is regarded as a sign of inflammation, which is associated with structural progression^[1-3]. However, the significance of tenderness without swelling is unclear.

Objectives

To determine whether clinical tenderness can be considered a sign of inflammatory joint activity in patients with rheumatoid arthritis (RA), osteoarthritis (OA), or psoriatic arthritis (PsA)

Patients and Methods

34/26/31 patients respectively with RA, OA and PsA were included in the study. Each patient underwent clinical examination, followed by an ultrasound examination of bilateral MCP 1-5 (metacarpophalangeal), PIP 1-5 (proximal interphalangeal) joint and wrists; the sonographer was blinded to clinical data. On clinical examination synovial swelling and tenderness were evaluated using a binary scoring method, and tender, non-swollen joints (TNS) were identified. Grey-scale signs of synovitis (GS) and Power Doppler signal (PD) were evaluated using a semiquantitative grading system.

Differences of PD signals between groups (RA vs. OA, RA vs. PsA, TNS vs. non-tender non-swollen joints) were calculated by Chi-Square test. Furthermore, joints of RA and PsA patients were tracked back for up to 6 years to identify the time point of the last swelling of that respective joint. Kaplan-Meier estimates for the occurrence of the last time point of swelling were compared between PD positive and PD negative TNS joints.

Results

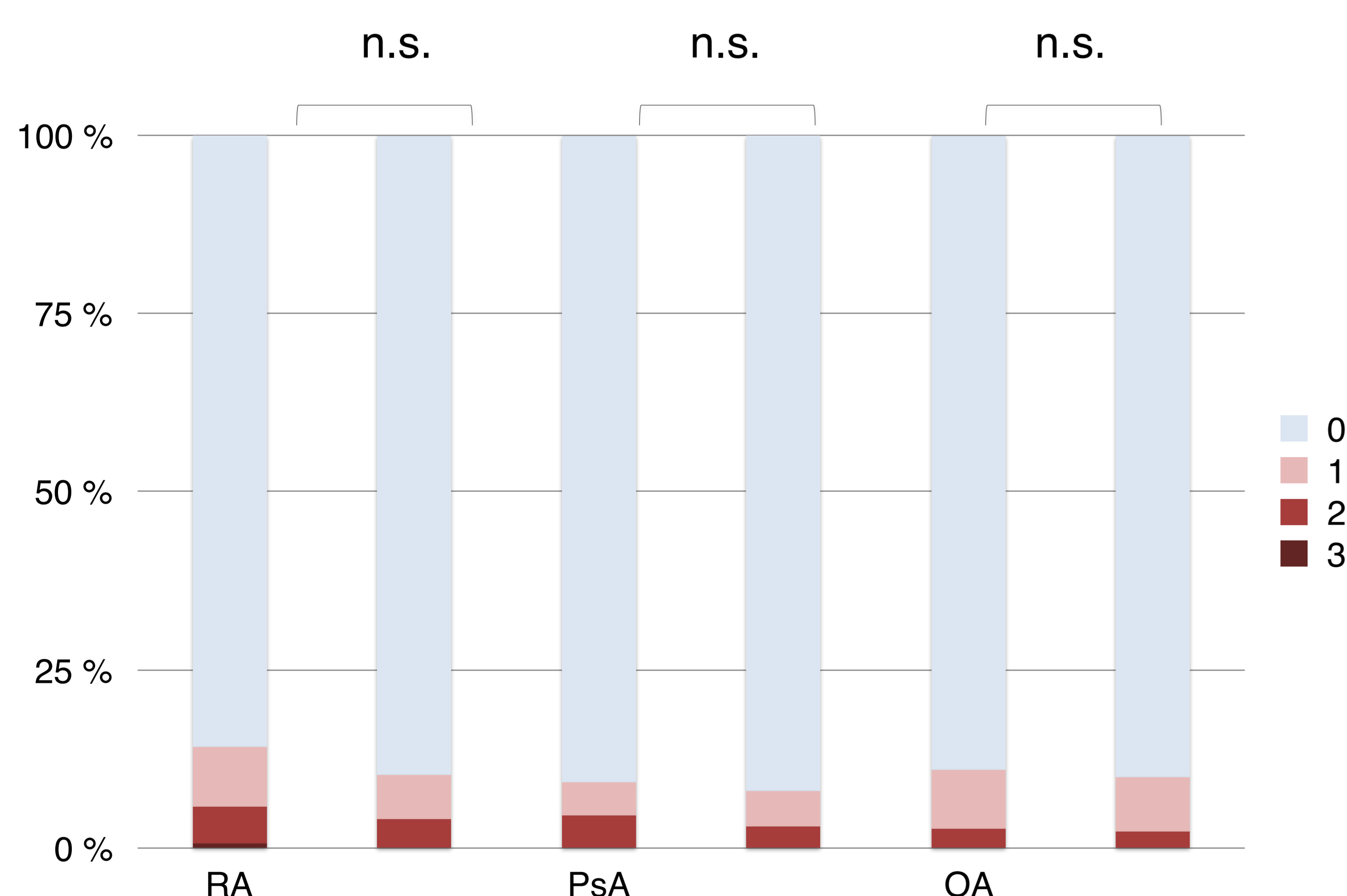


Figure 1. Power Doppler signals (grade 1, 2 or 3) in tender not swollen joints (tender) vs. not tender not swollen joints (not tender) in RA (rheumatoid arthritis), PsA (psoriatic arthritis) and OA (osteoarthritis). Difference in the proportion of Power Doppler positive joints between tender and not tender joints was calculated for each disease.

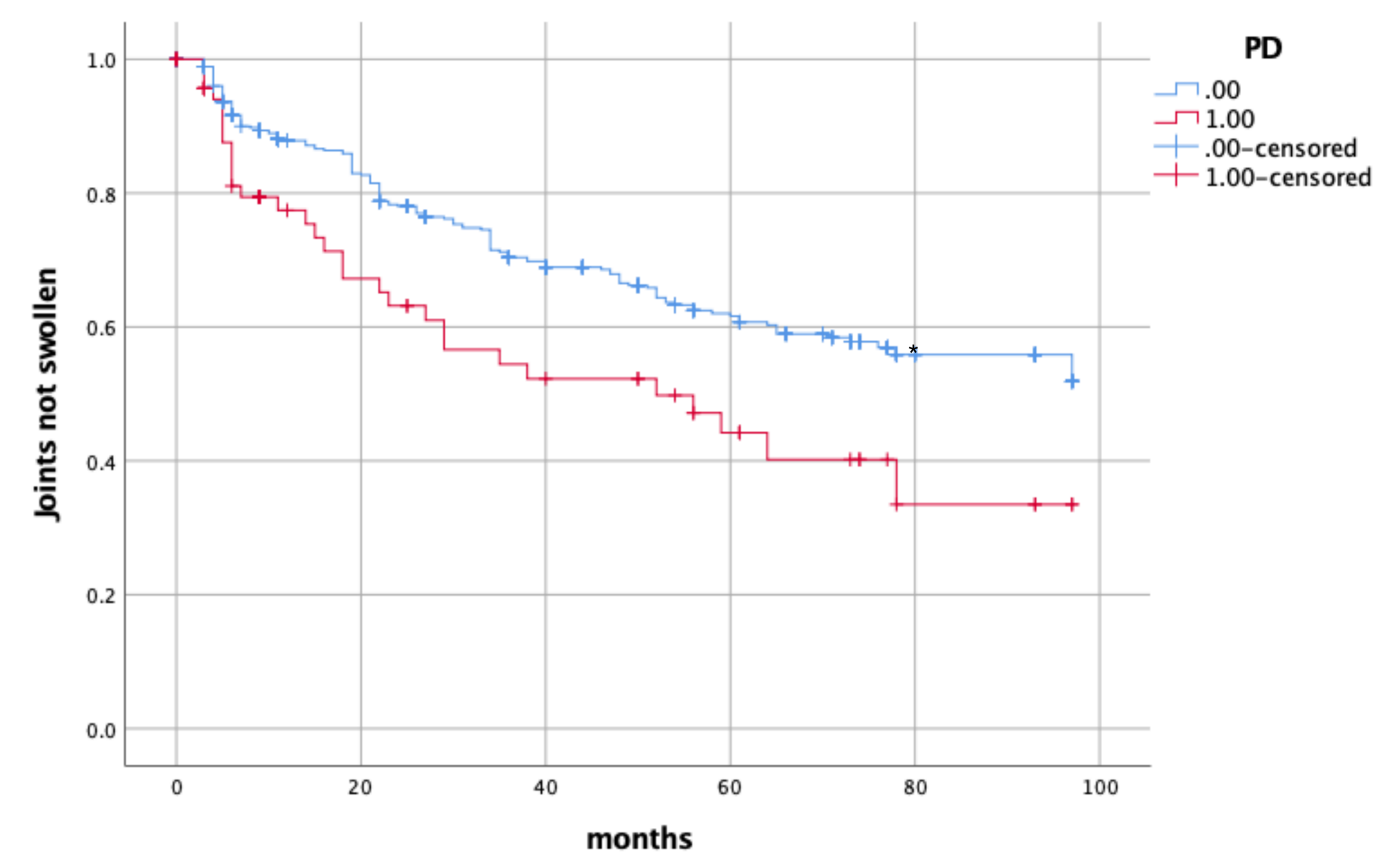


Figure 2. Time to last observed swelling for Power Doppler positive (PD 1, red line) not swollen joints vs. Power Doppler negative (PD 0, blue line) not swollen joints of patients with rheumatoid arthritis. Kaplan Meyer analysis revealed significantly shorter time period for PD positive compared to PD negative joints (52.04 vs. 67.65 months, $p < 0.01$)

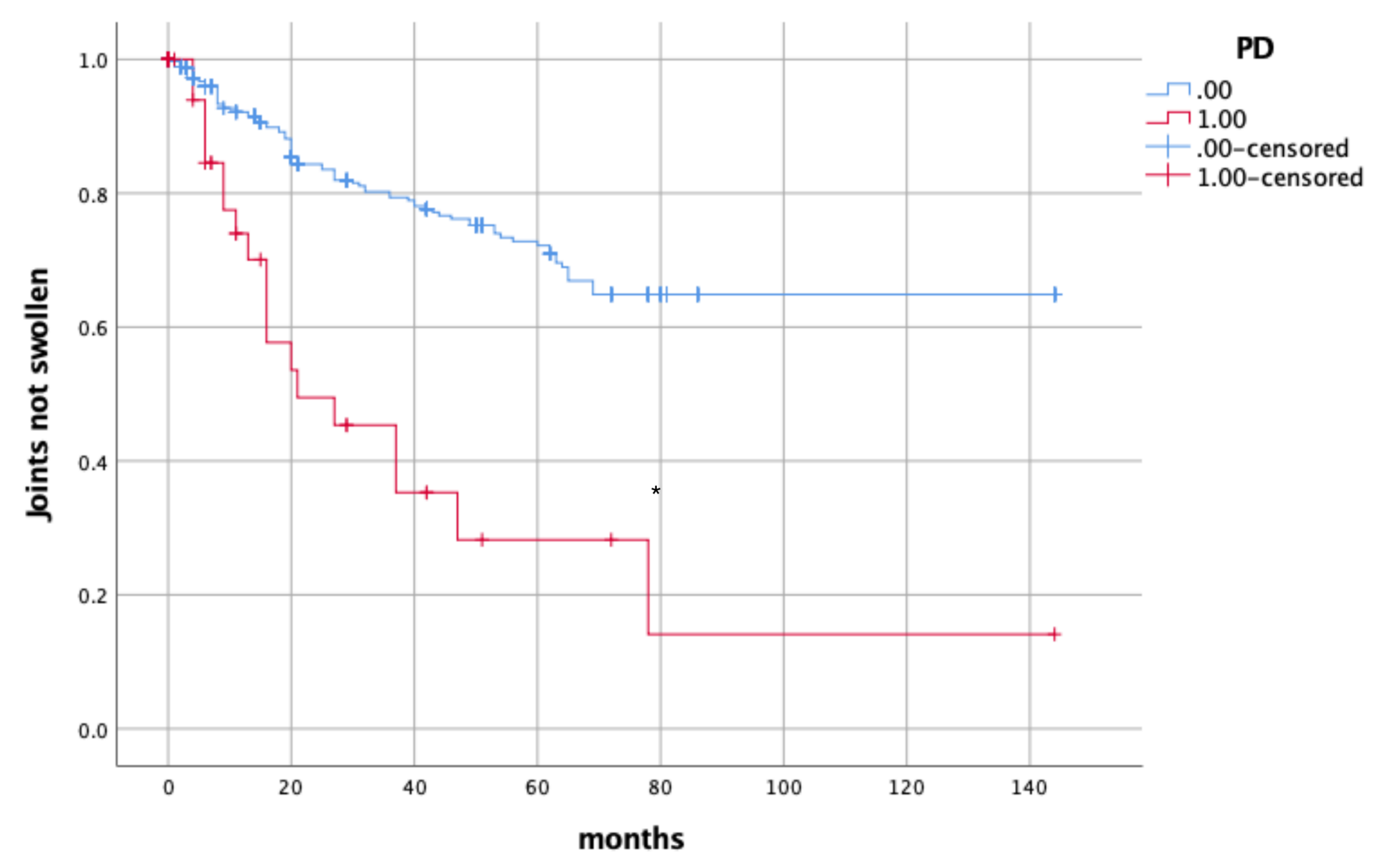


Figure 3. Time to last observed swelling for Power Doppler positive (PD 1, red line) not swollen joints vs. Power Doppler negative (PD 0, blue line) not swollen joints of patients with psoriatic arthritis. Kaplan Meyer analysis revealed significantly shorter time period for PD positive compared to PD negative joints (45.48 months vs. 105.01 months, $p < 0.001$)

Conclusion

The results of this study suggest that tenderness might not be a sign of active inflammation in RA, PsA and OA. Positive Power Doppler sign in not swollen joints was associated with shorter time to last swelling in tender and not tender joints.

References

1. Conaghan PG et al., Arthritis Rheum 2003; 48: 64-71
2. Aletaha D et al Ann Rheum Dis 2011; 70: 1975-1980
3. Aletaha D et al Arthritis Rheum 2011; 63: 3702-3711