The Journal of Rheumatology 2025;52 Suppl 3:23–9
doi:10.3899/jrheum.2025-0701
First Release September 15 2025

The Journal of Rheumatology

Advancing Psoriatic Disease Knowledge: Highlights From the GRAPPA 2024 Trainee Symposium

Clementina López-Medina[1], Michelle Mulder[2], Lihi Eder[3], and M. Elaine Husni[4]

ABSTRACT. The Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) 2024 annual meeting in Seattle, Washington, began with the trainee symposium, showcasing exceptional research by dermatology and rheumatology trainees in psoriatic diseases. This summary highlights 5 oral presentations and 16 posters spanning basic, translational, clinical, and outcomes research, reflecting GRAPPA's global impact on advancing knowledge in the field.

Key Indexing Terms: GRAPPA, psoriasis, psoriatic arthritis

Introduction

The Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) 2024 annual meeting in Seattle, Washington commenced with the highly anticipated trainee symposium. This symposium highlighted the outstanding research endeavors of dermatology and rheumatology trainees focused on psoriatic disease (PsD). This report provides a detailed summary of the symposium, which featured 5 oral presentations and 16 posters selected from 48 submitted abstracts based on their excellence and relevance to the field. These abstracts, submitted by researchers from 15 countries, were rigorously reviewed by 22 GRAPPA members. These contributions spanned a diverse array of topics, including basic and translational science, clinical research, and outcomes studies, collectively demonstrating GRAPPA's significant influence on advancing knowledge and fostering innovation in PsD research at both national and international levels.

Oral presentations

1. Characterization of circulating preosteoclasts in psoriatic arthritis. Joseph Hutton (Cambridge, UK); Senior Principal Investigator: Naomi McGovern

The objective of this study was to characterize circulating preosteoclast cells (pre-OCs) and their role in psoriatic arthritis (PsA) pathophysiology. Peripheral blood mononuclear cells (PBMCs) were collected from patients with PsA, patients with cutaneous psoriasis (PsO) without arthritis, and healthy participants. High-throughput bulk-sequencing and gene set enrichment analysis was performed on monocyte subsets from 4 healthy and 5 PsA donors. Suspension mass cytometry was performed on PBMCs from 10 healthy, 10 cutaneous PsO, and 10 PsA donors. Observed changes in blood populations and synovial populations were validated using healthy, PsA, and rheumatoid arthritis (RA) tissue single-cell RNA sequencing data. Mass cytometry identified a subset of circulating pre-OCs that are enriched for markers of synovial tissue-homing and that are expanded in PsA. Circulating pre-OCs are enriched for key osteoclast transcripts, including tartrate-resistant acid phosphatase (ACP5), cathepsin K (CTSK), matrix metalloproteinase 9 (MMP9), and dendrocyte expressed 7 transmembrane protein (DCSTAMP), as well as transcripts important for synovial tissue-homing. Infiltrating synovial tissue monocytes and synovial tissue osteoclasts in PsA expressed the same synovial tissue-homing markers. Finally, activated PsA synovial endothelium expressed the cognate ligands for the tissue-homing receptors found on circulating pre-OCs. In conclusion, the authors identified a blood pre-OC population that is primed for synovial tissue-homing and disease relevant cytokine production, expanded in PsA, and corresponds to infiltrating synovial tissue monocytes and osteoclasts. This circulating population is enriched for osteoclastogenesis markers.

2. PsO and PsA show metabolic similarities at the entheses using in vivo molecular imaging with multispectral optoacoustic tomography: Results from the MAPSA study. Filippo Fagni (Erlangen, Germany); Senior Principal Investigator: David Simon

The objective of this study was to investigate in vivo metabolic changes at the entheses in patients with PsO, PsA, and healthy controls (HCs) using multispectral optoacoustic tomography (MSOT). Previous research suggests that patients with PsO with subclinical changes at the entheses are at a significantly higher risk of developing PsA. The authors performed a cross-sectional study; 90 participants (30 PsO, 30 PsA, 30 HC) underwent clin-

[1]C. López-Medina, MD, PhD, Department of Rheumatology, Reina Sofia University Hospital, IMIBIC, University of Cordoba, Cordoba, Spain; [2]M. Mulder, MD, PhD, Department of Rheumatology, Radboud University Medical Centre, Nijmegen, the Netherlands; [3]L. Eder, MD, PhD, Women's College Hospital, University of Toronto, Toronto, Ontario, Canada; [4]M.E. Husni, MD, MPH, Department of Rheumatic and Immunologic Diseases, Cleveland Clinic, Cleveland, Ohio, USA.

C. López-Medina and M. Mulder contributed equally as co-first authors.

L. Eder and M.E. Husni contributed equally as co-senior authors.

Address correspondence to Dr. M.E. Husni, Department of Rheumatic and Immunologic Diseases, Cleveland Clinic, 9500 Euclid Ave, Desk A50, Cleveland, OH 44195, USA. Email: husnie@ccf.org.

Accepted for publication June 29, 2025.

ical, ultrasonographic, and MSOT examinations of 6 entheses. MSOT-measured hemoglobin (Hb), oxygen saturation, collagen, and lipid levels were quantified. Results showed that both patients with PsA and those with PsO exhibited elevated oxygenated Hb (PsA: $P = 0.003$; PsO: $P = 0.05$) and oxygen saturation (PsA: $P < 0.001$; PsO: $P = 0.001$) levels and decreased collagen signals (PsA: $P < 0.001$; PsO: $P < 0.001$) compared to HCs, with more pronounced changes in those with PsA. In addition, tender entheses had significantly lower collagen ($P = 0.01$) and higher lipid levels ($P = 0.03$) than nontender entheses. Ultrasound findings of erosions and enthesophytes correlated with oxygen saturation ($P = 0.01$) and lipid changes ($P = 0.02$), respectively. The authors concluded that these data suggest overlapping metabolic profiles for PsO and PsA at the entheses that are exacerbated in the presence of inflammation. This supports the hypothesis of a PsD spectrum characterized by shared immunometabolic tissue changes.

3. Psoriatic Arthritis Impact of Disease thresholds defining disease symptoms/impact severity in PsA were more stringent in a trial setting than in an observational study. Clementina López-Medina (Paris, France); Senior Principal Investigator: Laure Gossec

The 12-item Psoriatic Arthritis Impact of Disease (PsAID-12) questionnaire score allows for an assessment of patient-important symptoms and quality of life (QOL) impact in PsA. The objective was to compare the proposed thresholds estimated for disease symptom/impact severity according to PsAID-12 in a trial setting vs an observational study setting. Two sets of thresholds for the PsAID were compared: (1) the evaluation of pooled data from 2 randomized clinical trials (RCTs) of bimekizumab; and (2) preliminary analyses of the observational international Remission and Flare in Psoriatic Arthritis (ReFlap) study. A total of 1252 and 289 patients were included in the RCT and ReFlaP studies, respectively. PsAID-12 total scores at baseline were 4.2 (SD 1.9) and 3.4 (SD 2.5) in the RCT and ReFlaP, respectively. Cutoffs for remission, low, moderate, and high impact severity thresholds identified in the RCTs were more stringent compared to those identified in ReFlaP. Remission was defined as a score < 2 in ReFlaP, which was close to the cutoff found for low impact in the RCTs (≤ 1.95). These differences could be explained by (1) a skewed population toward more severe/symptomatic patients in the RCTs, (2) higher patient expectations in RCTs, or (3) exclusion of depression in RCTs. In conclusion, the recently published thresholds defining different levels of symptoms/impact for PsAID-12 did not fully overlap with thresholds proposed in an observational setting. Cutoffs for remission and low disease activity found in the ReFlaP study were less stringent. These findings warrant further studies.

4. Exploring the relationship between skin disease activity and the Psoriatic Arthritis Disease Activity Score in PsA. Michelle Mulder (Nijmegen, the Netherlands); Senior Principal Investigator: Philip S. Helliwell

The relationship between skin disease activity and the Psoriatic Arthritis Disease Activity Score (PASDAS) in patients with PsA was explored. The study used data from 2 large, independent cohorts: 1126 patients from the British Society for Rheumatology PsA register (BSR-PsA) and 588 patients from the GRAPPA Composite Exercise (GRACE) dataset. Skin disease activity was assessed using the body surface area (BSA) score and the Dermatology Life Quality Index (DLQI). Mean PASDAS and scores for physician global assessment (PGA) and patient global assessment (PtGA) on a visual analog scale (VAS) were calculated for each category of skin severity by both BSA and DLQI. Additionally, within each cohort, 2 groups were created based on the severity of skin disease (BSA cutoff of 10). Propensity score matching was applied to match groups for musculoskeletal disease activity, and differences between the groups were assessed. In both cohorts, PASDAS, PGA, and PtGA scores increased significantly with increasing skin scores. For the subjects grouped by severity of skin involvement, significant differences in PASDAS, PGA score, and DLQI were seen for the BSR-PsA data, whereas significant differences in PGA and PtGA scores, DLQI, and age were seen for the GRACE dataset. These results suggest that skin disease activity is reflected in the PASDAS score, most likely through the inclusion of global VAS assessments.

5. Validation of handheld ultrasound devices for point of care use in rheumatology: interim analysis for enthesitis. Seyyid Bilal Acikgoz (Ottawa, Ontario, Canada); Senior Principal Investigator: Sibel Zehra Aydin

This study evaluated the concurrent validity of a handheld ultrasound (HD3 L15 scanner, Clarius Mobile Health) device compared to a gold-standard ultrasound device (LogicE9, GE HealthCare) for detecting enthesitis in patients with peripheral PsA. A total of 160 entheses were examined across 10 patients. The examination included key enthesitis lesions (hypoechogenicity, thickening, erosions, enthesophytes, calcification, and Doppler). Image reading was performed at least 2 weeks after the acquisition of ultrasound in all patients. To ensure blinding, a random order slide show was conducted for scoring, irrespective of the machine, anatomical site, or patient. The handheld device demonstrated substantial agreement for detecting enthesophytes and erosions; moderate agreement for thickening, Doppler, and hypoechogenicity; and slight agreement for calcifications. Strong correlations were found between the devices for inflammation scores (r 0.82, $P = 0.003$), chronicity scores (r 0.77, $P = 0.009$), and total enthesitis scores (r 0.87, $P = 0.001$). These interim results suggest that handheld ultrasound devices are a promising, cost-effective alternative for enthesitis detection and warrant further testing for broader clinical use.

Poster presentations

6. Effects of secukinumab on enthesophyte and erosion progression in PsA: a 1-year, double-blind, randomized, placebo-controlled trial using high-resolution peripheral quantitative computed tomography. Isaac T. Cheng (Hong Kong, Hong Kong); Senior Principal Investigator: Lai-Shan Tam

In this study, the authors aimed to ascertain the effect of secuki-

numab (SEC) on erosion and enthesophyte progression in PsA by high-resolution peripheral quantitative computed tomography (HR-pQCT). This was a 1-year, double-blind, randomized, placebo-controlled trial (ClinicalTrials.gov: NCT0362386740) in which patients with erosion in the metacarpophalangeal joints (MCPJ) 2-4 were randomized in a 1:1 ratio to either the SEC or placebo group. HR-pQCT of the MCPJ 2-4 were performed at baseline, week 24, and 1-year. Forty patients were recruited, and 34 patients completed study treatment. After 1 year, a significant difference was observed in the change in erosion volume between the 2 groups. A higher proportion of preexisting erosion in SEC exhibited partial erosion healing when compared to those in the placebo group (51% vs 30%, $P = 0.03$). After 1 year, a significant difference was observed in the change in enthesophyte volume between the 2 groups. There were 1 and 6 new enthesophytes identified in the SEC group and placebo group, respectively. The proportion of enthesophytes with progression, defined as changes in volume exceeding the smallest detectable change of 0.12 mm^3, tended to be higher in the placebo group compared to the SEC group (40% vs 16%, $P = 0.11$). The generalized estimating equations analysis showed that the odds ratio (OR) for enthesophyte progression in the SEC group was 0.26 (95% CI 0.08-0.87, $P = 0.03$). In conclusion, SEC appears to have a potential benefit in preventing enthesophyte progression and facilitating partial erosion repair in PsA.

7. Characteristics of patients with difficult-to-treat PsA: Results from e-Pulse, the nationwide health database. Gözde Kart Bayram (Ankara, Turkey); Senior Principal Investigator: Umut Kalyoncu

This study explored the clinical and demographic characteristics of difficult-to-treat (D2T) patients with PsA, with D2T defined as those prescribed ≥ 2 biologic (b-) disease-modifying antirheumatic drugs (DMARDs) with distinct mechanisms of action. The Turkish Ministry of Health's e-Pulse database was used for this analysis. PsA cases were identified through International Classification of Diseases, 10th revision (ICD-10) codes. A total of 40,463 patients with PsA were included in the analysis; 11,920 (29.4%) used ≥ 1 bDMARD, and 2610 (6.4% of all patients with PsA, 21.8% of bDMARD users) were classified as D2T. No significant differences in common comorbidities (eg, hyperlipidemia, glucose intolerance) were observed between patients using 1 vs multiple bDMARDs. However, depression (32.3% vs 26.1%, OR 1.35) and fibromyalgia (12% vs 7.5%, OR 1.64) were more frequent among D2T patients. Additionally, D2T patients were more likely to use conventional DMARDs and glucocorticoids. These findings suggest that depression and fibromyalgia are prevalent in D2T patients with PsA, highlighting the importance of tailored care for this patient group.

8. Accelerometer-measured daily steps in adults with PsD: A cross-sectional analysis of the UK Biobank. DylanMcGagh (Oxford, UK); Senior Principal Investigator: Laura C. Coates

PsA has been linked to lower physical activity levels compared to the general population. To date, most evidence has relied on self-reported measures of physical activity, which are crude and prone to recall bias. Wearable devices, such as accelerometers, can continuously and more objectively measure physical activity. This study reported the association between PsD and accelerometer-measured daily step count, and explored the mediating role of comorbidities and relevant medications on daily steps in PsD. This study analyzed 94,436 UK Biobank participants (2013-2016) who wore accelerometers on the wrist for 7 days. Among these participants, 2625 had PsO and 337 had PsA. Using multivariable linear regression, PsA was associated with 540 fewer daily steps (95% CI 137-942, $P = 0.009$) and PsO with 194 fewer daily steps (95% CI 48-340, $P = 0.009$) compared to nonpsoriatic controls. Mediation analysis showed that these reductions were partially explained by higher BMI, comorbidities, and depression. Subgroup analyses revealed that individuals prescribed acute or long-term opioids, as well as systemic corticosteroids, exhibited significantly reduced step counts. The study highlights that participants with PsD are less physically active, with contributing factors including comorbidities, depression, and medication use. These findings suggest the need for targeted interventions to promote physical activity in patients with PsD, particularly those with additional health burdens or those taking certain medications.

9. The difference in disease impact between matched patients with early PsA and RA before and after treatment. Anne-Fleur van den Biggelaar (Rotterdam, the Netherlands); Senior Principal Investigator: Marijn Vis

This study aimed to compare disease impact between patients with PsA and RA at diagnosis and after 1 year of treatment, focusing on patient-reported outcomes (PROs). Using propensity score matching and inverse probability weighting, 581 patients with PsA from the Dutch South West Early Psoriatic Arthritis (DEPAR) cohort and 422 patients with RA from the Treatment in the Rotterdam Early Arthritis Cohort (tREACH) were analyzed. PROs included pain, fatigue, activity limitations, and health impact. At diagnosis, patients with PsA reported significantly worse mental health (−12.37 units on the 36-item Short Form Health Survey mental component summary; 95% CI 5.67 to 19.01, $P < 0.001$) and general health (+9.28 units on the general health VAS; 95% CI −14.22 to −4.34, $P < 0.001$) compared to patients with RA. After 1 year of treatment, patients with PsA still experienced poorer mental QOL (−4.22 units; 95% CI 1.92 to 6.53, $P < 0.001$) than those with RA. However, no differences were observed in other PRO domains. These findings suggest that the disease burden in early PsA is higher compared to matched patients with early RA, especially with regard to mental health, both at diagnosis and after 1 year of treatment. This higher burden of disease may well be due to the extraarticular disease manifestations in patients with PsA.

10. Serum calprotectin (S100A8/9) and complement factor C3 as alternative inflammatory markers in early CRP-negative patients with PsA: Data from METAPSA cohort. Alla Ishhenko (Leuven, Belgium); Senior Principal Investigator: Kurt de Vlam

In patients with PsA, acute-phase reactants such as C-reactive protein (CRP) are not highly reliable in measuring inflamma-

tion. This study aimed to investigate whether alternative markers of systemic inflammation can detect systemic inflammation in patients with PsA with normal CRP levels. DMARD-naïve patients with early PsA and normal CRP levels (≤ 5 mg/L) were compared to HCs and patients with early RA. Thirty-nine (58%) of 67 patients with PsA had normal CRP levels. The markers complement C3, calprotectin (S100A8/9), and serum amyloid A (SAA) were significantly elevated in CRP-negative patients with PsA compared to HCs (Cohen *d* 0.18-0.22, $P < 0.001$), whereas thrombocytes, mean platelet volume, and ferritin showed no significant differences. Receiver-operating characteristic analysis demonstrated the utility of C3 in differentiating CRP-negative PsA patients from HCs, with an area under the curve of 0.734, sensitivity of 71.1%, and specificity of 60.4% at a cutoff of 0.99 g/L. After 1 year of treatment, levels of C3, calprotectin, and SAA declined significantly, which coincided with the improvement in disease activity variables (tender joint count of 68 joints [TJC68], swollen joint count of 66 joints [SJC66], Disease Activity Index for Psoriatic Arthritis [DAPSA]). Additionally, calprotectin and C3 levels correlated with TJC68 and SJC66, suggesting that these markers are indeed associated with inflammation in PsA. In conclusion, complement C3, calprotectin, and SAA are reliable markers for measuring systemic inflammation in patients with early PsA with normal CRP levels.

11. Characterizing axial inflammation in patients with PsD not fulfilling Assessment of SpondyloArthritis international Society axSpA entry criteria: Findings from the ATTRACT study. Alice Agostinelli (Ancona, Italy); Senior Principal Investigator: Michele Maria Luchetti Gentiloni

Axial psoriatic arthritis (axPsA) is characterized by chronic inflammatory back pain, but existing Assessment of SpondyloArthritis international Society (ASAS) classification criteria for axial spondyloarthritis (axSpA) may miss axPsA cases. This study analyzed the Axial Psoriatic Arthritis Screening Ancona Italy (ATTRACT) cohort to identify patients with PsO and axial inflammation who did not meet ASAS back pain entry criteria: (1) back pain onset after the age of 45 (late-onset back pain [LoBP]) or (2) back pain lasting < 3 months (nonchronic back pain [NcBP]). These patients were classified as "non-ASAS back pain" (non-ASAS/BP) and were compared with those fulfilling ASAS back pain entry criteria (ASAS/BP). In the ATTRACT cohort, 50/265 patients (18.8%) reported non-ASAS/BP, with 68% having LoBP and 32% having NcBP. The non-ASAS/BP group had higher mean age, male prevalence, and CRP levels, but lower frequencies of inflammatory back pain and related symptoms (morning back stiffness, night-time back pain, improvement with exercise, and buttocks pain) compared to the ASAS/BP group. Clinical disease activity scores (DAPSA, Axial Spondyloarthritis Disease Activity Score with CRP [ASDAS-CRP], and Bath Ankylosing Spondylitis Disease Activity Index [BASDAI]) were similar in both groups. AxPsA was confirmed in 6/50 patients (12%) in the non-ASAS/BP group (with 83% showing sacroiliac joint inflammation on MRI), significantly lower than in the ASAS/BP group (29%). This study demonstrates that a considerable proportion of patients reporting LoBP or NcBP may present active axPsA. Considering the later onset of back pain and the different clinical features compared with patients with axSpA, these findings highlight the need for classification criteria tailored to axPsA.

12. Incidence and predictors of primary failure of advanced therapy in patients with PsA. Fadi Kharouf (Toronto, Ontario, Canada); Senior Principal Investigator: Dafna D. Gladman

In this study, authors aimed to define the incidence of primary failure of bDMARDs and targeted synthetic DMARDs (tsDMARDs) in patients with PsA and identify their associated factors. Primary failure was defined as the physician's judgment of inefficacy during the first year of therapy, or failure to achieve ≥ 40% reduction in the baseline SJC and ≥ 50% reduction in the baseline Psoriasis Area and Severity Index (PASI). Patients with primary failure were compared to responders and to patients who stopped treatment for nonefficacy-related reasons. A total of 591 patients were included, with tumor necrosis factor inhibitors (TNFi) being the most used advanced therapy (82.2% patients), followed by interleukin 17A inhibitors (IL-17Ai; 8.3%), IL-23i and IL-12/23i (4.4%), and tsDMARDs (5.1%). A total of 209 (35.4%) patients experienced primary failure, with an incidence rate of 0.35/person-years. The variables associated with primary failure were daily alcohol consumption (OR 3.52, 95% CI 1.33-9.31), higher BMI (OR 1.04, 95% CI 1.01-1.08), and fibromyalgia (OR 2.07, 95% CI 1.03-4.16). Higher educational level (OR 0.51, 95% CI 0.38-0.87), higher damaged joint count (OR 0.95, 95% CI 0.93-0.99), and HLA-B*27 positivity (OR 0.40, 95% CI 0.17-0.97) were associated with a reduced risk of primary failure. In conclusion, primary failure of advanced therapy is common in PsA and may be influenced by several factors, including socioeconomic characteristics, comorbidities, and disease-related features.

13. PsA patient profiles are different between RCTs of bDMARDs and a real-world study over the same timeframe (PsABio): A literature review with metaanalysis. Gelsomina Alle (Paris, France); Senior Principal Investigator: Laure Gossec

PsA patient profiles in RCTs may not reflect patients in usual clinical practice. This study aimed to compare characteristics of patients with PsA between RCTs of bDMARDs and real-world patients enrolled in the PsABio observational study using meta-analysis. Data from 10 RCTs (5654 patients; 2015-2020) and PsABio (930 patients; 2015-2018) were analyzed, focusing on clinical features and disease burden at baseline. Compared to PsABio patients, RCT patients had significantly ($P < 0.001$) higher SJC/TJC (SJC: 11.8 vs 5.7; TJC: 21.5 vs 11.9), more frequent enthesitis (64.7% vs 48.2%) and dactylitis (37.7% vs 19.8%), and greater skin involvement (BSA > 3%: 62.2% vs 54%). However, PROs, such as the Health Assessment Questionnaire (HAQ; 1.2 vs 1.1) and pain (60 mm vs 61 mm), were similar across both groups. In contrast, CRP was significantly higher in PsABio (1.1 vs 1.4 mg/dL, $P = 0.002$) in comparison with RCT. Interestingly, almost half of PsABio patients would not have qualified for inclusion in the RCTs due to lower disease activity. This

highlights a key difference: RCTs primarily represent patients with highly active polyarticular PsA, whereas real-world patients starting bDMARDs often have mild/moderate joint disease and limited skin involvement. The study concluded that although RCTs focus on severe disease, real-world patients starting bDMARDs share a high disease burden, justifying treatment. These differences emphasize the need to consider real-world data when extrapolating RCT findings to clinical practice.

14. Association of contextual factors with sonographic inflammatory and structural phenotypes in patients with PsA. Andre L. Ribiero (Toronto, Ontario, Canada); Senior Principal Investigator: Lihi Eder

Various contextual factors, such as demographics, treatment history, and comorbidities, have known associations with ultrasound abnormalities, but their significance in PsA is unclear. This gap in understanding underscores the need for deeper investigation into how these factors interplay with sonographic findings in PsA. This study investigated how the contextual factors of age, DMARD exposure, and presence of diabetes influence ultrasound findings in patients with PsA. A total of 115 patients with active PsA underwent ultrasound evaluations for inflammatory and structural lesions, including synovitis, enthesitis, peritenonitis, tenosynovitis, bone erosion, and new bone formation. Older age (≥ 60 years) was independently associated with higher inflammation and structural lesions (adjusted β 6.37 and 14.6, respectively), bone erosion (adjusted β 2.53), and new bone formation (adjusted β 13.7, $P < 0.001$). Patients exposed to b/tsDMARDs had higher synovitis (adjusted β 12.8) and tenosynovitis scores (adjusted β 5.95, $P < 0.05$), whereas diabetes correlated with higher structural enthesitis but lower bone erosion scores. These findings suggest that older age is linked to more severe ultrasound lesions, possibly due to a more severe PsA phenotype or overlap with osteoarthritis (OA). Higher synovitis and tenosynovitis scores in b/tsDMARD-exposed patients may indicate greater disease severity. Integrating demographics and treatment history into ultrasound assessments can improve personalized management strategies for PsA.

15. Clinical enthesitis concerns half of patients with PsA, is more frequent in trials than in observational studies, and is assessed heterogeneously: A systematic review with meta-analysis of 84,262 patients from 212 studies. Caroline Pignon (Paris, France); Senior Principal Investigator: Laure Gossec

This systematic review with metaanalysis evaluated the prevalence, assessment methods, and localization of clinical enthesitis in patients with PsA, analyzing 212 studies comprising 84,262 patients. Enthesitis was found in 48.1% of patients (95% CI 43.1-53.1). Prevalence was higher in RCTs (70.1%) compared to observational studies (30.4%), likely reflecting differences in recruitment. Enthesitis was assessed using the Leeds Enthesitis Index (LEI; 63.7%), Madrid Sonography Enthesitis Index (MASES; 33.1%), and/or the Spondyloarthritis Research Consortium of Canada (SPARCC; 29.3%). The Achilles tendon (64.5% of studies), lateral epicondyle (41.9%), and plantar fascia (25.8%) were the most common enthesitis sites. The most used score was the LEI, which was associated with the lowest prevalence of enthesitis and lowest number of entheses involved. Patients with enthesitis reported greater pain, fatigue, and analgesic use, underscoring its effect on QOL. This review highlights enthesitis as a frequent manifestation of PsA, with a pooled prevalence of 48.1%. There is also a substantial burden of enthesitis on QOL in PsA and a need for standardized assessment methods to improve its evaluation and management.

16. Choice of biologic immunotherapy for PsO or PsA not associated with risk of major adverse cardiac events. Bonit Gill (Milwaukee, Wisconsin, USA); Senior Principal Investigator: Shikha Singla

This study investigated whether the risk of major adverse cardiac events (MACE), including congestive heart failure, myocardial infarction, and cerebrovascular accident, differs by bDMARD class in patients with PsO or PsA. Using the TriNetX electronic health records database, 32,758 new users of bDMARDs (62.9% TNFi, 15.4% IL-17i, 10.7% IL-23i, and 10.7% IL-12/23i) were analyzed. A weighted Cox proportional hazards model showed no significant difference in adjusted MACE risk across bDMARD classes compared to TNFi (IL-17i: average hazards ratio [aHR] 0.98, 95% CI 0.73-1.32; IL-23i: aHR 0.84, 95% CI 0.54-1.31; and IL-12/23i: aHR 1.08, 95% CI 0.80-1.47). Subset analyses, including patients with and without baseline cardiovascular disease, supported these findings, as did a negative control outcome (injury/trauma), which suggested adequate control of time-related biases and confounders. The researchers concluded that MACE risk does not differ across biologic classes in patients with PsO and PsA. This real-world evidence indicates that MACE risk should not influence bDMARD selection for managing PsD.

17. Identification and characterization of tissue-resident memory T Cells in PsA: Regulatory role in chronicity and treatment response. Krishna Sah (Mather, California, USA); Senior Principal Investigator: Siba P. Raychaudhuri

The aim of this study was to assess the role of tissue-resident memory T cells (TRM) in PsA by analyzing synovial fluid mononuclear cells (SFMC) from untreated, active patients with PsA, RA, and OA. TRM cells were phenotyped using high-dimensional fluorescence-activated cell sorting (FACS) to identify (CCR7-CD69+CD103+/CD49a+) T cells (CD3+CD4+/CD8+). Additionally, relevant Th1/Th17 cytokines (eg, TNF, interferon [IFN]-γ) were evaluated. The results showed that in PsA, CD4+ TRM cells represented 20.5% (SD 1.4%) of the SFMC population, significantly higher compared to RA (18.5% [SD 4.4%]) and OA (< 1%, $P < 0.001$). These CD4+ TRM cells in PsA were predominantly responsible for producing IL-17A (20.5% [SD 1.4%]) and IL-22 (8.4% [SD 1.3%]) compared to in RA (IL-17A: 5.9% [SD 1.2%], IL-22: 2.5% [SD 0.5%]; $P < 0.01$). In contrast, CD4+ TRM cells in RA produced higher levels of TNF (24.3% [SD 0.2%]) and IFN-γ (11.8% [SD 0.5%]) than those in PsA (TNF: 8.16% [SD 0.11%], IFN-γ: 4.5%; $P < 0.01$). To our knowledge, this study is the first to demonstrate the regulatory role of synovial

TRM cells in PsA. The authors suggest that targeting TRM cells could provide a potential strategy for achieving long-term remission in PsA. Additionally, the increased prevalence of Th17-skewed TRM cells in PsA compared to RA highlights the role of IL-23 in their regulation, offering valuable insights for therapeutic interventions.

18. Correlation between the questionnaires used to assess sexual function in psoriatic patients. Gabriel Deves (Rio de Janeiro, Brazil); Senior Principal Investigator: Sueli Carneiro

This study aimed to evaluate the correlation between the Sexual Quotient (SQ) questionnaires and the International Index of Erectile Function (IIEF) and Female Sexual Function Index (FSFI) questionnaires in patients with PsO and PsA. A total of 120 patients (60 men and 60 women) with PsO and/or PsA were assessed for sexual function. The SQ, IIEF, and FSFI were used to evaluate sexual dysfunction, with scores indicating dysfunction (< 62 for SQ, < 26.5 for FSFI, and < 26 for IIEF). The results showed a significant decrease in sexual function in patients with skin disease (SQ 58.5; IIEF 15.25) and/or joint disease (SQ 61; IIEF 18.75), with lower scores in female compared to male individuals. No statistically significant relationship was found between the severity of skin and/or joint disease and sexual dysfunction. Correlation analysis revealed a strong positive relationship between IIEF and SQ (+0.77, *r* 0.592) and between FSFI and SQ (+0.83, *r* 0.688). In conclusion, the researchers demonstrated a strongly positive correlation between the SQ and the more complex IIEF and FSFI questionnaires, suggesting that the SQ, due to its simplicity and accessibility, could be an effective tool for assessing sexual function in PsO/PsA.

19. Effects of apremilast on cytokine production and IL-23 levels predicting clinical response in PsA. Antonio Tonutti (Pieve Emanuele, Italy); Senior Principal Investigator: Carlo Selmi

This study aimed to evaluate the immunological (ex vivo) effects of apremilast in PsA and the predictive role of IL-23 serum levels for clinical response to apremilast. A total of 23 patients with PsA initiating apremilast and controls with knee OA were included. Peripheral blood samples were collected at baseline, 1 month (T1M), and 4 months (T4M) in patients with PsA. Monocyte-derived M1 macrophages were analyzed for cytokine gene expression (IL-23, TNF, IL-1β) and protein levels, whereas lymphocyte subsets (T cells, γδT cells, innate-like lymphocytes) were assessed via flow cytometry for cytokine production (IFN-γ, IL-17, IL-9). Seventeen patients with PsA responded clinically after 4 months. Responders had higher baseline macrophage IL-23 expression compared to nonresponders. In addition, only in responders did IL-23 decrease after 4 months. Elevated baseline serum IL-23 (> 1.4 pg/mL) predicted response to apremilast with an area under the curve of 0.79 (sensitivity 100%, specificity 68%). Additionally, apremilast reduced IL-17 (T cells at T1M/T4M), IL-9 (γδT cells at T1M/T4M), and IFNγ (γδT and ILC1 cells at T1M/T4M) exclusively in responders. These results suggest that higher baseline serum levels of IL-23 may serve as a potential biomarker for predicting apremilast responsiveness in PsA.

20. The neutrophil-lymphocyte ratio and cardiovascular events in PsO and PsA. Martina M. Torres (Buenos Aires, Argentina); Senior Principal Investigator: Enrique R. Soriano

This retrospective cohort study examined the association between the neutrophil-lymphocyte ratio (NLR) and MACE in patients with PsO and PsA, as well as the effect of treatment on NLR. A total of 967 patients were included, contributing 16,239 patient-years (PY) of follow-up. Baseline NLR was calculated prior to systemic therapy and categorized as low (< 2.5) or high (> 2.5). During the study, 69 MACE were observed (incidence rate [IR] 0.43/100 PY): 64 in PsO (IR 0.44/100 PY) and 5 in PsA (IR 0.31/100 PY). Patients with NLR > 2.5 had a higher risk of MACE (IR 0.63/100 PY) compared to those with NLR < 2.5 (IR 0.35/100 PY; IRR 1.8, 95% CI 1.1-2.8, $P = 0.01$). Biologic therapy reduced NLR risk category; within 6-12 months, 68% of patients with high baseline NLR shifted to low-risk status, whereas only 8% of those with low NLR transitioned to high-risk ($P = 0.007$). MACE incidence after biologics was low (IR 0.09/100 PY) compared to methotrexate (IR 0.23/100 PY). Within this cohort, there was a low incidence of MACE after initiation of biologics, as reflected by reduced NLR risk category. These findings underscore NLR as a simple, widely available predictor of MACE in patients with PsO and PsA.

21. Adverse events associated with oral small-molecule drugs in the treatment of PsO and PsA: A pharmacovigilance study based on the FAERS database. Yuanyuan Xu (Chengdu, China); Senior Principal Investigator: Xian Jiang

The objective of this pharmacovigilance study is to compare the adverse event (AE) profiles of the oral small-molecule drugs apremilast and deucravacitinib in the treatment of PsO and PsA. The study analyzed data from the US Food and Drug Administration Adverse Event Reporting System (FAERS) database, between Q1 2014 to Q4 2023. A total of 121,401 AE reports for apremilast and 1165 AE reports for deucravacitinib were retrieved, with the majority of reports coming from elderly women. The study found that apremilast was predominantly associated with gastrointestinal and nervous system AEs, such as diarrhea, nausea, and headache, whereas deucravacitinib showed a higher incidence of skin-related AEs, including acne, pruritus, rash, and erythema. The AE profiles of the 2 drugs were distinct, likely due to their different underlying mechanisms of action. These findings offer valuable insights to clinicians, highlighting the importance of considering the differential AE risks when choosing oral treatments for PsO and PsA.

Conclusion

The GRAPPA trainee session was highly successful, with strong attendance. Trainees received thoughtful and constructive feedback on their research projects. The scientific discourse fostered dynamic and engaging discussions, offering valuable insights and generating innovative ideas for future investigations. Anticipation is already growing for the next GRAPPA trainee symposium, which will convene in July 2025 in the vibrant city of Bogotá, Colombia. This event promises to be another

outstanding opportunity for advancing knowledge and fostering collaboration among the next generation of researchers.

ACKNOWLEDGMENT
We thank DerMEDit (www.dermedit.com) for editing services in preparation of this manuscript.

FUNDING
The authors declare no funding or support for this research.

COMPETING INTERESTS
CLM received research grants and/or consultancy fees from AbbVie, Lilly, UCB, Novartis, and Janssen. MM has received speaker fees and compensation for participation in advisory boards from Novartis. LE received research and educational grants from AbbVie, Pfizer, Janssen, Novartis, Eli Lilly, Sandoz, and Fresenius Kabi. MEH has served on the National Psoriasis Foundation Board of Directors and as a research investigator and/or scientific advisor/consultant for AbbVie, Amgen, Novartis, Lilly, Pfizer, UCB, and Janssen.

ETHICS AND PATIENT CONSENT
Institutional review board approval and patient consent were not required.

PEER REVIEW
As part of the supplement series GRAPPA 2024, this report was reviewed internally and approved by the Guest Editors for integrity, accuracy, and consistency with scientific and ethical standards.