Musculoskeletal Ultrasound as a Predictor of Response to bDMARDs and tsDMARDs in Psoriatic Arthritis

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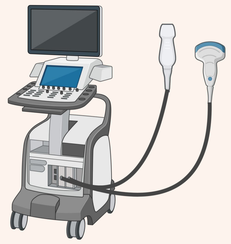
INTRODUCTION

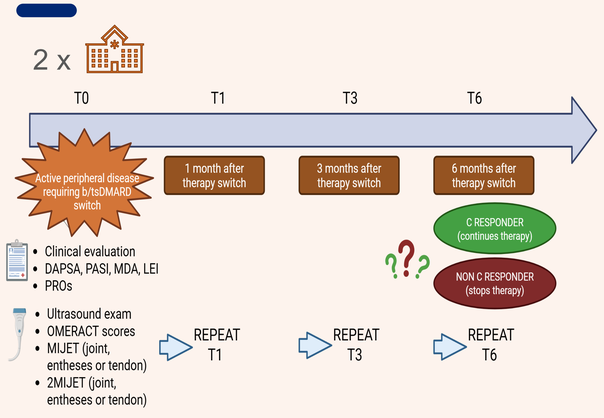
Ultrasound (US) has become an essential tool for enhancing clinical evaluation in PsA, with growing interest in its potential to identify early predictors of treatment efficacy and improve personalized care.



AIM

- **Evaluate the role of US in predicting drug retention in PsA patients** initiating or switching to biologic or targeted synthetic disease-modifying antirheumatic drugs (**bDMARDs/tsDMARDs**)

METHOD



- **MIJET:** the most clinically involved joint, enthesis, or tendon
- **2MIJET: the two most involved sites (joint, enthesis or tendon)**
  - ✓ Proved more performing than other scores in pilot study!

RESULTS

71 patients enrolled

Clinical characteristics at baseline

Demographic characteristics	
Age (years), mean (SD)	54.9 (11,19)
Male sex, n (%)	34 (47,88%)
Disease duration (months), mean (SD)	154 (101,85)
Smoking status, n (%)	
- Smoker	8 (11,36%)
- Ex-smoker	10 (14,08%)
- Non-smoker	53 (74,64%)
Onychopathy, n (%)	19 (26,76%)

Disease activity at baseline	
TJC 68, mean (SD)	6,85 (7,16)
SJC 66, mean (SD)	3,25 (3,38)
LEI, mean (SD)	1,04 (1,62)
cDAPSA, mean (SD)	23,30 (10,57)
HAQ, mean (SD)	0,99 (0,57)
PsAID, mean (SD)	4,63 (1,78)
PASI, mean (SD)	3,57 (4,72)

Response at 6 months

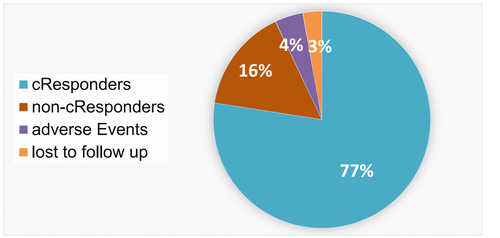
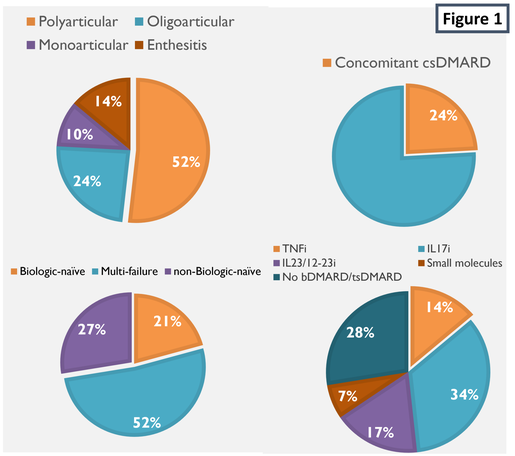


Figure 1



Baseline characteristics, including disease duration, BMI, and clinimetric scores, were comparable between groups, except for a higher LEI score in non-cResponders

Figure 2

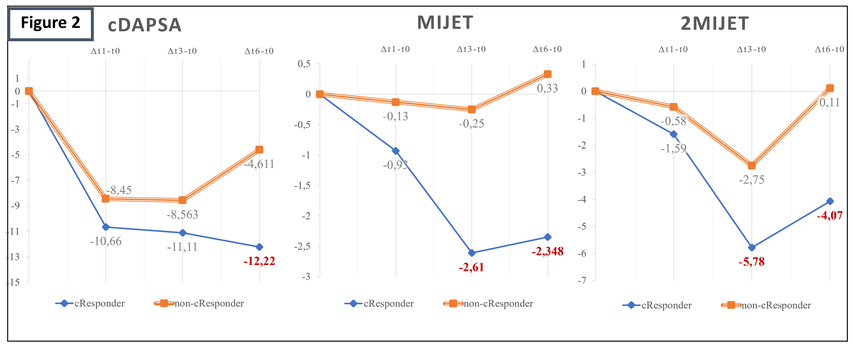
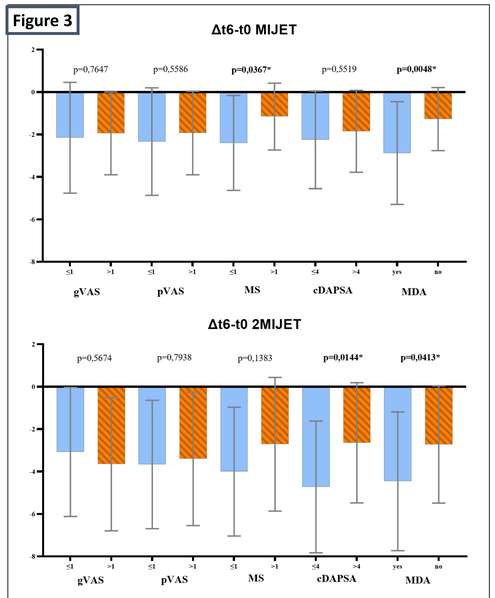


Figure 3



Legend: MIJET=Most Involved Joint/Enthesis/Tendon; 2MIJET= two Most Involved Joints/Entheses/Tendons; gVAS= global assessment visual analog scale; pVAS= pain visual analog scale; MS= morning stiffness; cDAPSA= clinical disease activity index for psoriatic arthritis; MDA=minimal disease activity.

- ✓ **Significant reductions in MIJET and 2MIJET score at T3 and T6 in cResponders vs. non-cResponders** (MIJET: Δt3-0 p=0,0044; Δt6-0: p=0,0013; 2MIJET: Δt3-0: p=0,0424; Δt6-0: p=0,0024).
- ✓ **Changes in clinimetric indices, were delayed, becoming significant only at t6.**

- Patients in **clinical remission** (MDA or cDAPSA ≤ 4) vs patients non in clinical remission at t6
  - ✓ US score changes were significantly higher in patients in remission
  - ✓ **MDA was significantly correlalated with changes in both MIJET and 2MIJET** (p=0,0048 p=0,0413)
  - ✓ cDAPSA was significantly associated with changes in 2MIJET (p=0,0144)
  - ✓ PROs: morning stiffness correlated with MIJET(p=0,0367)

CONCLUSIONS

- MIJET and 2MIJET are **potential early ultrasound predictors** of drug retention in PsA, identifying subclinical improvements in inflammation earlier than traditional clinimetric measures.
- There is **discrepancy** between clinical and US responses, as well as between US scores and PROs
- MIJET and 2MIJET can **help dissect PsA's heterogeneity and complexity**, differentiating between inflammatory and non-inflammatory pain.
- Further **validation in larger cohorts** and **long-term studies** is necessary to establish these indices as standard tools for predicting therapeutic success in PsA.

REFERENCES

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