Effects of TNFi versus Secukinumab on ultrasound confirmed enthesitis in PsA (ref 21A124)

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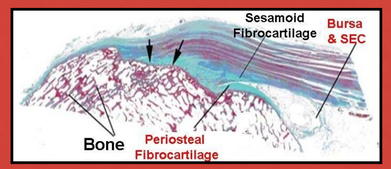
What is enthesitis and why does it matter?

- Inflammation at the focal insertional sites of bony attachments to tendons, ligaments, fascia, muscles, or joint capsules
- Hallmark of PsA and linked with the pathogenesis of disease
- It is an important part of the clinical presentation and those patients with enthesitis do worse in terms of disease progression and quality of life.

Its is understudied to date



How do we choose a biologic in PsA ?

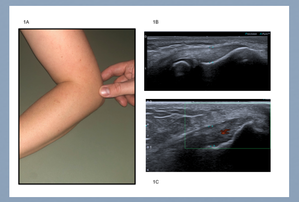
No clear clinical musculoskeletal findings to guide **drug choice**

40% of patients will not respond to a first line **TNFi** and we now have several alternative biologic treatment options

Clinical scores developed for enthesitis have been shown to have **poor validity, sensitivity and reliability**

Ultrasound (US) has emerged as the preferred modality to assess enthesitis

1a-Lateral epicondyle/CEO exam
1b-Normal CEO US
1c-Inflamed entheses



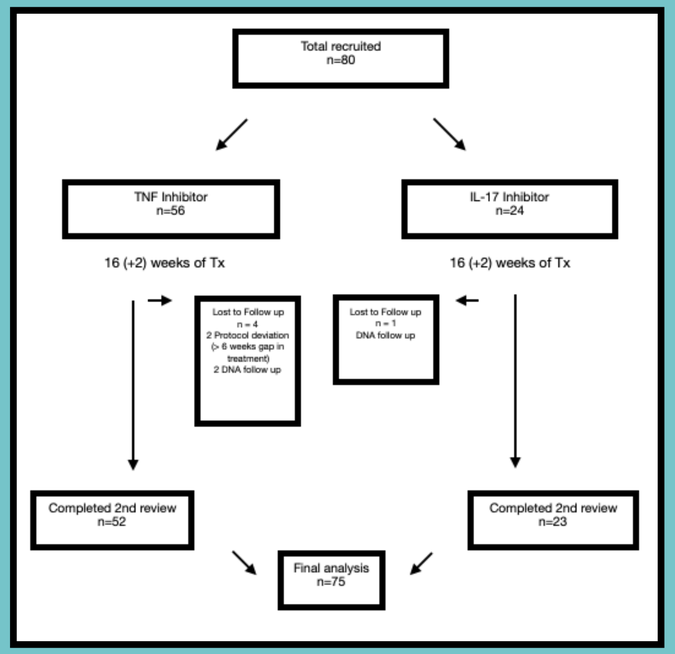
Observational Clinical Study

Primary outcome: **The change in Madrid US Enthesitis (MASEI) score at 4 months from baseline assessment.**

- The MASEI score is a validated tool for US enthesitis and assesses six key entheseal sites on both sides of he body.
- **Chronic l**esions include calcification, erosions and enthesophytes
- **Active** lesions include a thickened, hypoechoic tendon at the entheses, positive power doppler signal and bursitis
- Maximum score is 136
- The score was also adapted to include only active lesions (MASEIActive) and doppler signal within 2mm of the enthesis (MASEImActive)

Patients are assessed by a blinded sonographer prior to commencing on biologic therapy and then at 4 months

Recruitment



Clinical outcomes

Baseline Characteristics (n=80)

Mean age 45yrs, BMI 29.0 kg/m^2, 8yrs PsA duration, 52.5% female and 51% on a concomitant DMARD.

Mean Baseline Disease Scores (n=80)

Tender joint (12/68), Swollen joint (4/66), PASI (3.1), HAQ (1.3), Leeds enthesitis index (1.2/6), SPARCC (2.8/16), CRP (6.8mg/L), DAPSA (29.4), dactylitis (0.7/20) and NAPSI (9.8/80)

Groups broadly matched for demographics, disease activity and imaging data

Outcomes (n=75)

Significant reduction in PASI score with Secukinumab versus TNFi (3.44 (3.50) vs 1.03 (2.30) p = 0.001) and DLQI (5.57 (7.52) vs 1.35 (4.18) p = 0.005)

Otherwise similar findings were seen for both classes of biologic therapy. 43.5% IL-17 reached MDA versus 40.4% in TNFi group

Imaging outcomes

Table 2. Ultrasound outcomes with change in ultrasound score (SD) by treatment administered

Ultrasound index	IL17i	TNFi	Mean difference (95% CI) TNFi vs IL17i	p value
MASEI	1.74 (3.36)	3.42 (5.13)	1.68 (-0.31 - 3.68)	0.097
MASEIActive	2.26 (2.99)	4.37 (5.15)	2.10 (0.21-4.00)	**0.030**
MASEImActive	2.00 (2.52)	4.37 (4.78)	2.37 (0.68-4.05)	**0.007**

Baseline MASEI scores overall

- **Overall mean MASEI 23.7/136, MASEIActive 11.7/64 and MASEImActive 11.1/64**
- **TNFi showed a more marked decrease in US enthesitis scoring versus secukimumab**
- **This was significant when only including active entheseal disease**
- **Clinical SPARCC correlated with the baseline MASEIActive score (r = 0.23 p =0.042) and a change in SPARCC significantly correlated with a change in MASEIActive (r = 0.28 p =0.014)**