

Improvement in the Dermatology Life Quality Index for Patients With Psoriasis and Psoriatic Arthritis Treated With Etanercept

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INTRODUCTION

- The prevalence of psoriatic arthritis (PsA) in patients with psoriasis is estimated to be as high as 30%, contrasted with an occurrence of approximately <1% in the general population.^{1,3} Inception of PsA usually lags inception of psoriasis by several years.^{1,3}
- Dermatologists and other practitioners treating patients with moderate to severe plaque psoriasis are in an ideal position to screen for PsA and provide early therapeutic intervention in order to prevent progression, joint damage and pain, which worsen the patient's quality of life.
- Etanercept (ETN), a fully human tumor necrosis factor soluble receptor, is approved for treatment of both psoriasis and psoriatic arthritis. ETN is efficacious in treating both the skin and joint symptoms of these diseases.

The aim of this investigation is to:

- Determine whether quality of life as measured by the Dermatology Life Quality Index (DLQI) improves during treatment with etanercept (ETN) for patients with both psoriatic arthritis (PsA) and psoriasis.
- Evaluate the relationship between baseline DLQI and physician assessment of psoriasis severity, arthritis severity, number of swollen joints, number of tender joints and patient assessment of joint pain.

METHODS

This clinical study was registered in the Clinical Trials.gov (NCT00195507) registry.

Patients

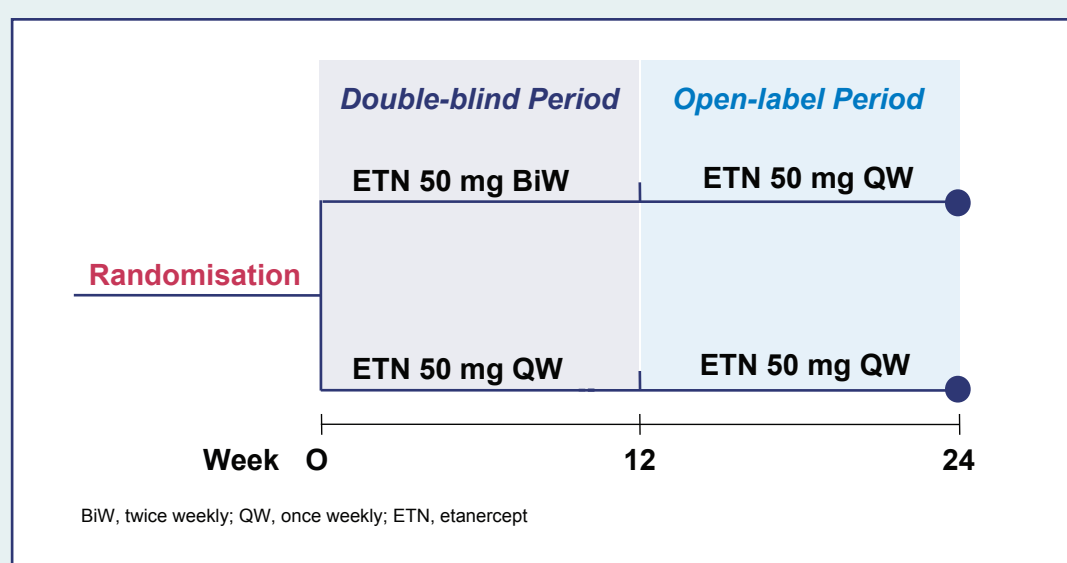
Key Eligibility Criteria Included:

- 18 years or older
- Moderate-to-severe plaque psoriasis with body surface area involvement $\geq 10\%$
- Physician Global Assessment (PGA) moderate or worse (≥ 3)
- Active PsA, defined as:
 - Two or more swollen/tender joints for at least 3 months
 - Patient-reported joint pain for at least 3 months
 - Negative serum rheumatoid factor within 6 months of screening

Study Design

- This randomised, multicentre study enrolled patients with both psoriasis and psoriatic arthritis from 110 global sites.
- In the double-blind period, patients received either ETN 50 mg BiW or 50 mg QW (DB) for 12 weeks; in the subsequent open label period patients received 50 mg QW for 12 wk (Figure 1).

Figure 1. Study Design Schema



Measurement Instruments

Dermatology Life Quality Index	Patient-Reported Joint Pain
<ul style="list-style-type: none"> The DLQI is a validated patient-reported quality-of-life questionnaire. It consists of 10-questions. Scores range from 0 to 30. A score of 10 or more indicates quality of life impairment. A minimum important difference is considered to be between 2.3 and 5.7. Observations were made at baseline, 3, 6, 12, and 24 weeks during the study. 	<ul style="list-style-type: none"> Joint pain is assessed by the patient with a 10 cm horizontal scale scored from 0 to 100 rated from 'no pain' to 'extremely painful'. The patient question is 'How painful have your joints been over the last week?'
Psoriasis Area and Severity Index (PASI)	Joint Assessment, Number of Tender and Swollen Joints
<ul style="list-style-type: none"> PASI is a clinical measure of the average redness, thickness, and scalliness of the psoriasis lesions, and proportion of skin involved. Recorded on a scale of 0 to 72, where 0 represents no psoriasis lesions, and 72 represents 100% body coverage of the worst possible lesions. Scores ≥ 10 represent severe psoriasis. 	<ul style="list-style-type: none"> The Joint Assessment is part of the core set of disease activity measures for clinical trials of arthritis recommended by the American College of Rheumatology (ACR). ACR tender joint count: an assessment of 68 joints. Physicians assess several different aspects of tenderness by pressure and joint manipulation on physical examination. The data on various types of tenderness is then collapsed into a single tender-versus-nontender dichotomy. ACR swollen joint count: an assessment of 66 joints (excludes the hip joints). Joints are classified as either swollen or not swollen.
Physician Global Assessment (PGA) - Psoriasis	
<ul style="list-style-type: none"> The PGA-Psoriasis is scaled from 0 to 5, higher scores indicating worse skin symptoms. A subjective assessment made by a dermatologist. 	
Physician Global Assessment (PGA) - Arthritis	
<ul style="list-style-type: none"> The PGA-Arthritis is scaled from 0 to 100, higher scores indicating worse arthritis symptoms. A subjective assessment made by a rheumatologist. 	

Statistical Analysis

- Pre-specified response analysis was performed using the modified intention-to-treat population by time point. Tests were two-tailed with an alpha of 0.05. Last-observation-carried-forward was used for imputation of missing values.
- Improvement from baseline in DLQI scores was compared between treatment groups using Analysis of Covariance (ANCOVA) models controlling for baseline DLQI and for pooled study site.
- Within each treatment group, baseline DLQI was compared to Week 12 and Week 24 using an ANCOVA controlling for pooled study site.
- DLQI was a secondary measure in this trial and no adjustment was made for multiple comparisons.
- Relationships at baseline between DLQI and PASI, PGA-psoriasis, PGA-arthritis, patient-reported joint pain, tender joint count and swollen joint count were examined post-hoc using Pearson correlations.
- Correlations can range from 1.0 (perfect correlation) to -1.0 (perfect negative correlation). A correlation statistic of 0 indicates no correlation. Correlations in the area of 0.30 are considered moderate and correlations below 0.20 but above 0 are considered weak.

Disposition

Of 747 patients with DLQI assessed post-baseline, 376 were in the ETN 50 mg BiW group and 371 in the ETN 50 mg QW group.

Demography and Baseline Clinical Data

- Demographics were mean age, 47 y; 63% men; 89% white (Table 1).
- The mean DLQI total score was 12 for both etanercept groups indicating severe impairment.
- Disease severity at baseline is evident for both psoriasis and PsA. Mean baseline clinical data were PGA-psoriasis, 3.6; affected BSA, 31%; PASI score, 19. PGA-arthritis, 50.

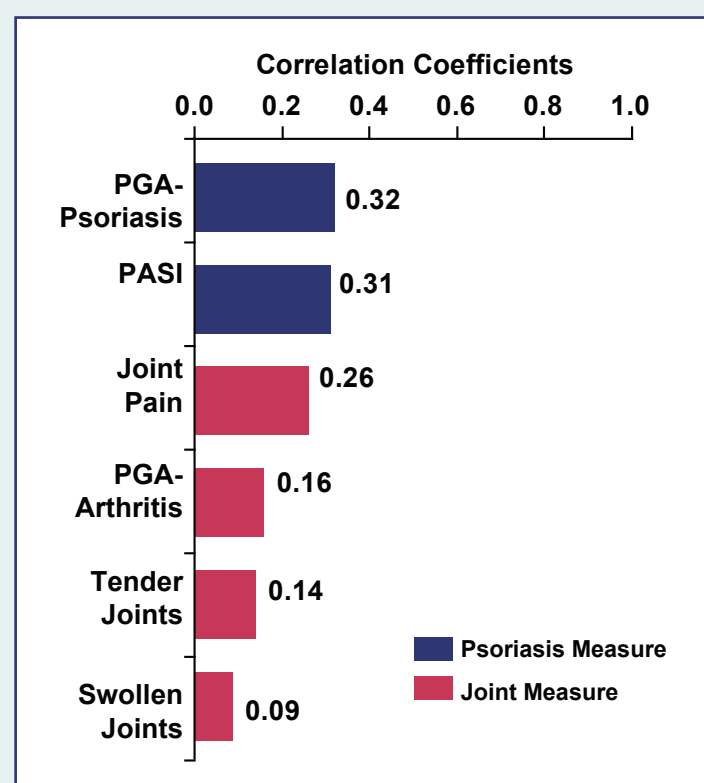
Table 1. Demographics and Baseline Clinical Data

	ETN 50 mg BiW/QW (n=379)	ETN 50 mg QW (n=373)
Age, y	46	47
Gender, %	Male	64
Race, %	White	88
BMI	28	28
PsO Disease Duration, y	19.3	18.6
PsA Disease Duration, y	7	7
Body Surface Area affected	31	30
PGA-psoriasis	3.6	3.6
PASI	20	19
PGA-arthritis	51	50
Joint Pain	63	62
Swollen Joints, n	12	13
Tender Joints, n	19	19
DLQI, total	12	12

Baseline Correlations

- DLQI correlated moderately with PGA-psoriasis and PASI (0.32 and 0.31, respectively), but only weakly with PGA-arthritis and swollen joints (0.16 and 0.09, respectively) (Figure 2).
- The correlation between DLQI and joint pain (0.26) was numerically less than the correlation between DLQI and skin measures.
 - The t-test showed no statistical difference between the DLQI - joint pain correlation and the DLQI - skin measure correlation ($P \geq 0.253$)

Figure 2. Baseline Correlations With DLQI



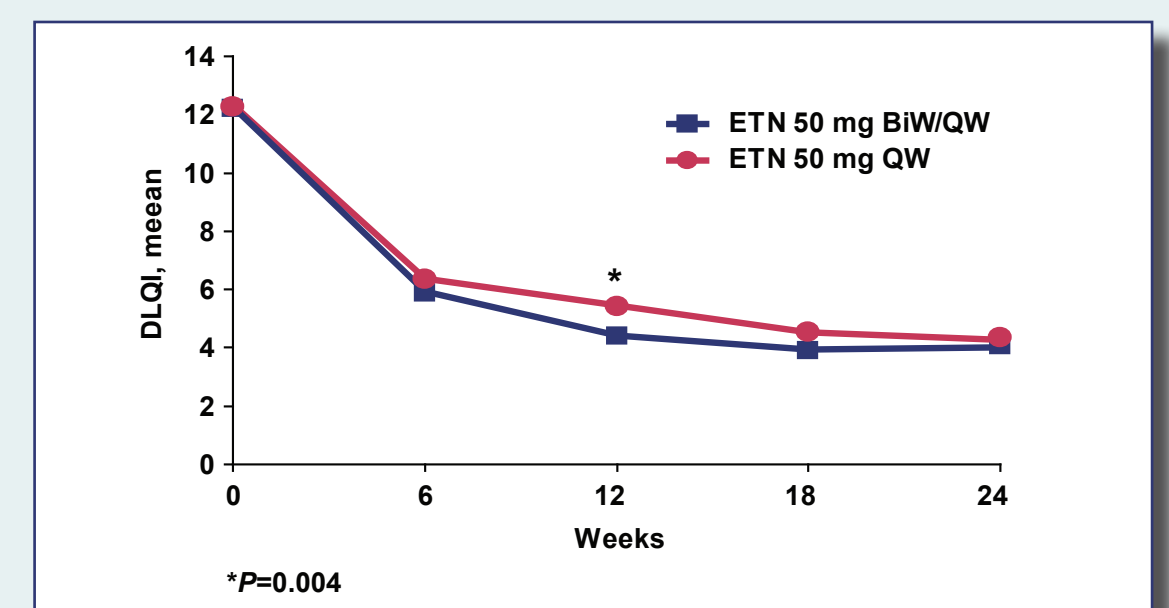
- All correlations with DLQI were significant ($P \leq 0.01$).

RESULTS

Improvement in DLQI

- At Week 12, the 50 mg BiW group had a mean DLQI of 4.42 vs. 5.47 in the 50 mg QW group, representing a significant difference between the groups ($P=0.004$), but was not meaningful (≥ 5). Each group had a significant and meaningful improvement from baseline ($P < 0.001$ for both).
- At Week 24, the comparison between the groups was not significant ($P=0.483$) (Figure 3).

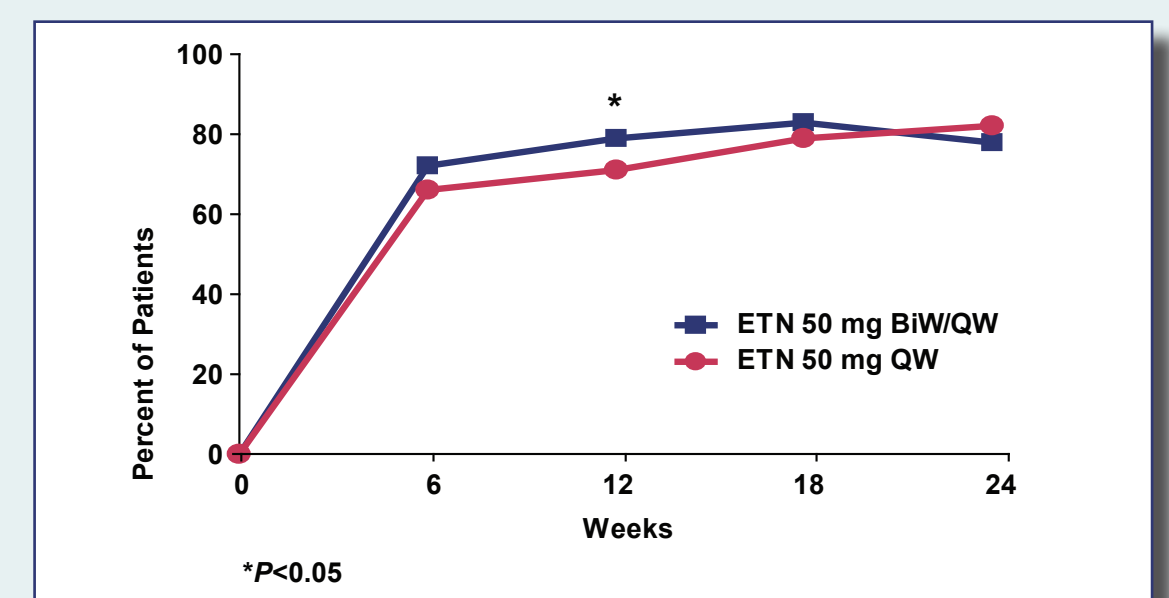
Figure 3. DLQI Improvement



Improvement from Baseline by ≥ 5 in DLQI

- The percent of patients that improved from baseline by a DLQI total score ≥ 5 was comparable between the 2 ETN groups, except for Week 12 where the difference was significant ($P=0.0163$) (Figure 4).

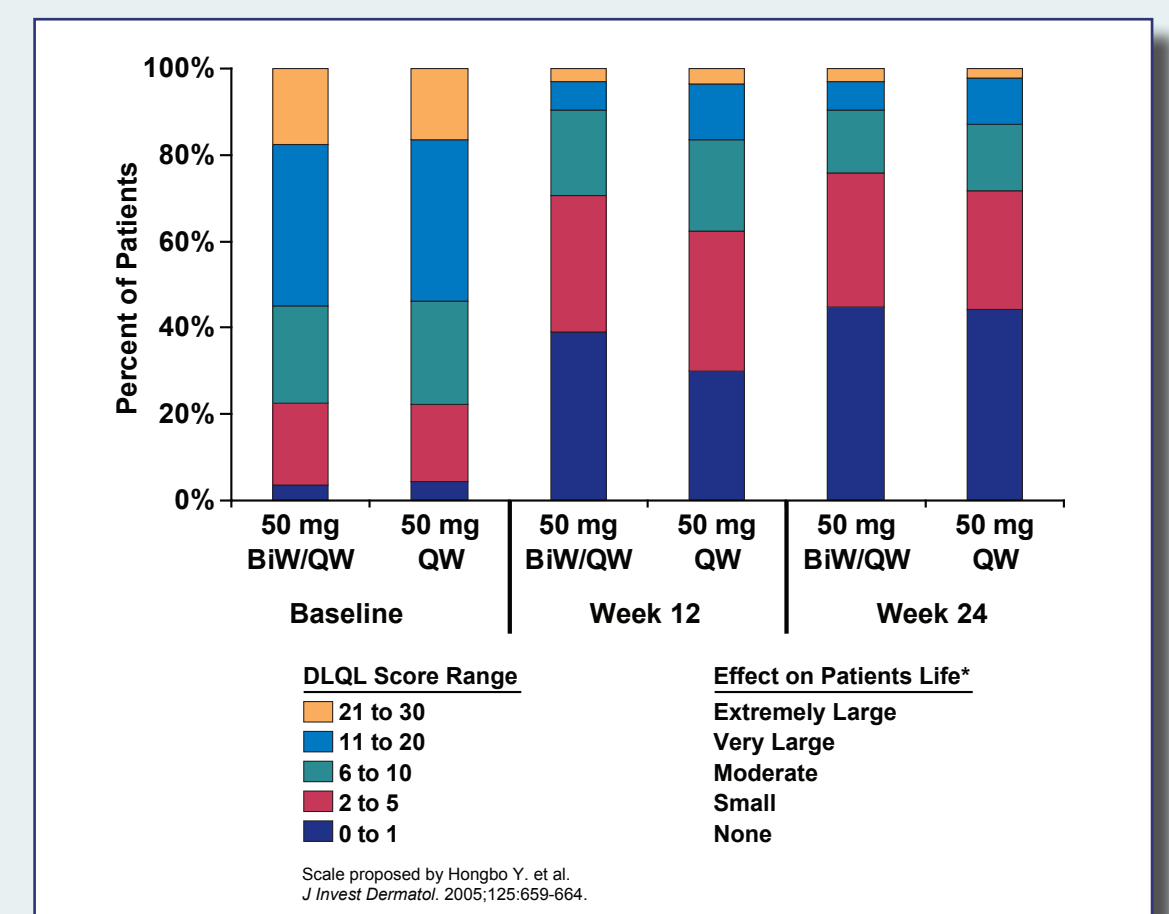
Figure 4. Patients With Improvement (≥ 5 decrease) in DLQI



DLQI Ranges

- DLQI data were categorized in bands (Figure 5).
- At Week 12, more patients in the ETN 50 mg BiW/QW group had DLQI scores in the 0 to 1 range compared to the ETN 50 mg QW group, but at Week 24 the percentage of patient responses were similar.

Figure 5. DLQI Ranges



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CONCLUSIONS

- For this population of patients with PsA, baseline DLQI correlated better with clinical measures of psoriasis than with measures of arthritis disease activity.
 - DLQI appears to measure aspects of psoriasis not fully captured by physician assessments, and therefore these results suggest DLQI merits inclusion in standard psoriasis examinations.
- DLQI scores improved more quickly with etanercept 50 mg BiW than with etanercept 50 mg QW at Week 12, but this difference was not meaningful.
- Both treatment groups continued to improve and achieved comparable DLQI scores at Week 24.