Efficacy analysis
Primary Endpoint MRI sacroiliac joints and spine

The primary endpoint was the improvement of the total Berlin MRI score for sacroiliac joints and spine as compared to baseline after 12 weeks of therapy with Tofacitinib or Placebo. At Baseline the Berlin MRI Score for SIJ was 3.3 (4.2; 0.0-12.7) for the tofacitinib group, at week 12 1.8 (3.1; 0.0-11.3) and at week 24 1.44 (2.06; 0.0-7.00). For the placebo group ist was 5.5 (4.8; 0.0-13.7) at baseline, 4.5 (4.7; 0.0-16.3) at week 12 and after switch to tofacitinib at week 24 it was 2.97 (1.47; 0.0-5.33). The Berlin MRI Score for the spine was 4.6 (8.3; 0.0-30.0) at baseline for the tofacitinib group, it was 1.6 (3.6; 0.0-13.0) at week 12 and 1.6 at week 24 (3.5; 0.0-12.3). For the placebo group the Baseline Spine score was 2.9 (6.2; 0.0-22.3), at week 12 it was 2.6 (6.2; 0.0-21.0) and after switch to tofacitinib at week 24 it was 1.7 (3.9; 0.0-13.3), see images.

Figure 1a Berlin MRI SIJ Score

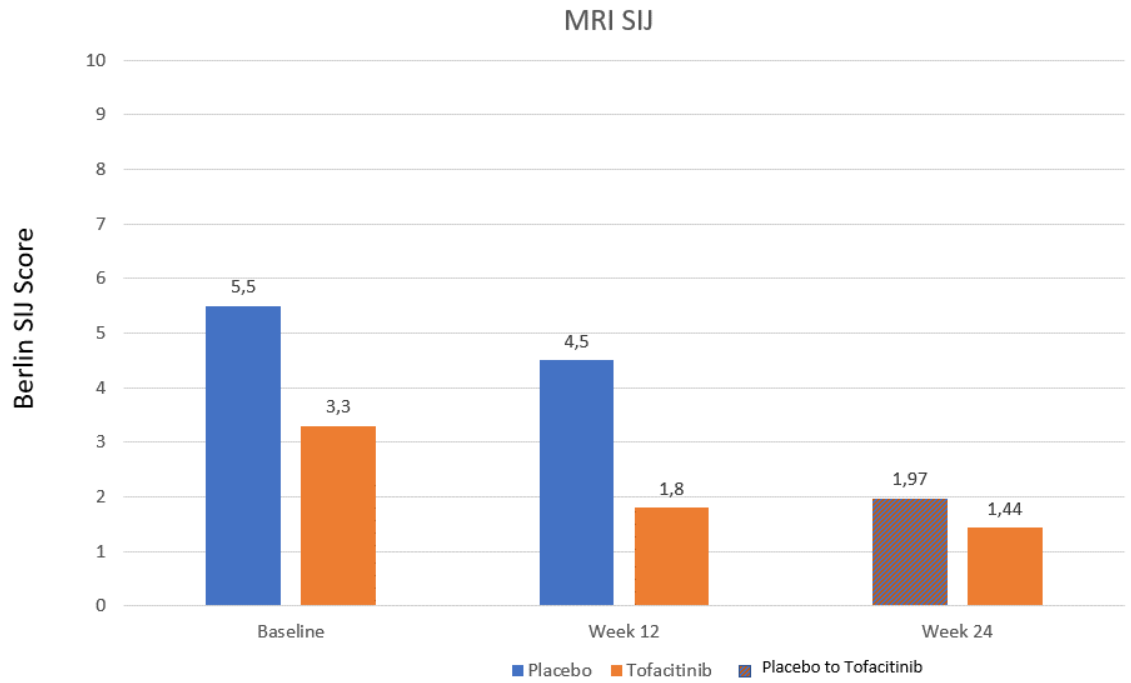


Figure 1b: Berlin SIJ Score – changes from Baseline

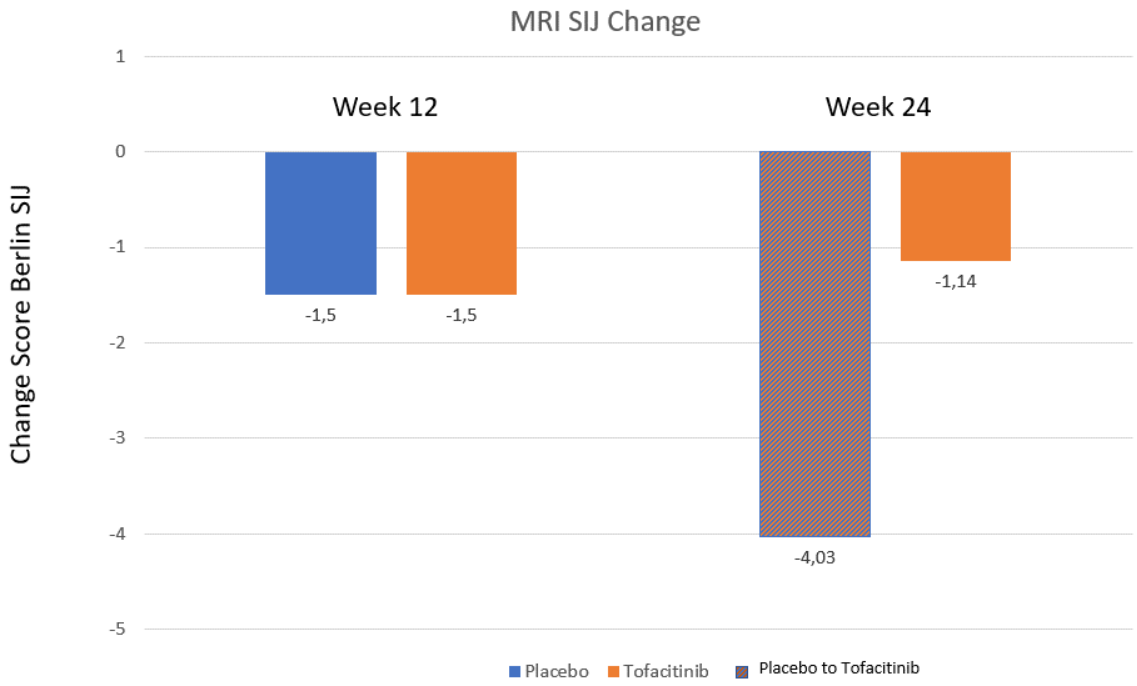


Figure 1c: Berlin MRI Spine Score

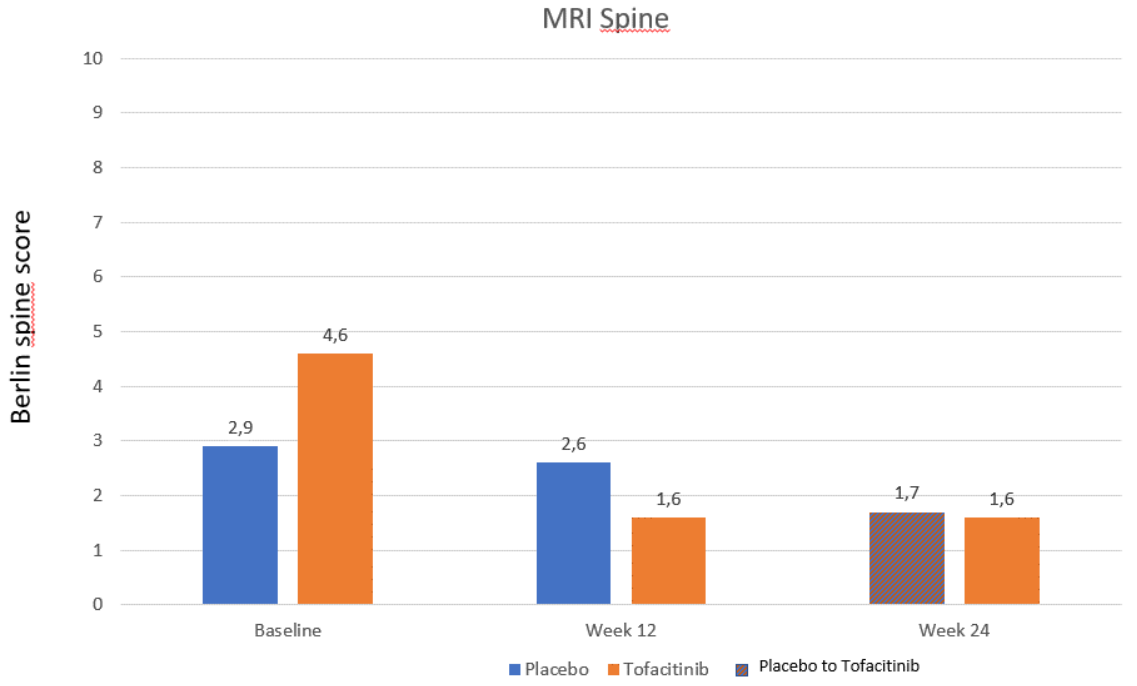
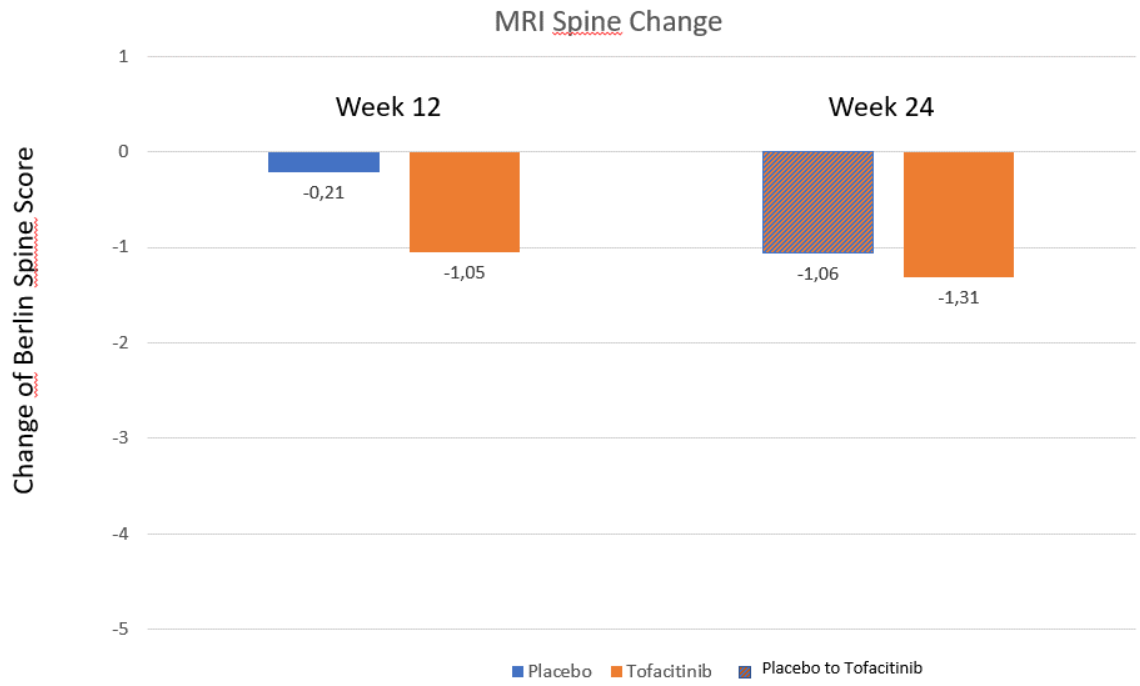


Figure 1d: Berlin MRI Spine Score – changes from Baseline



Secondary endpoints

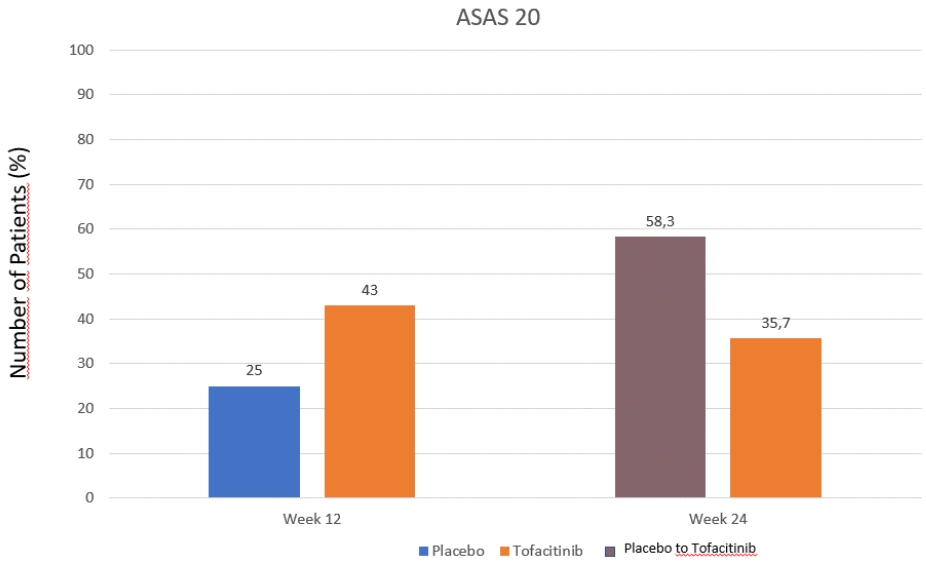
- **Improvement of the total Berlin MRI score for SIJ and spine at week 24 as compared to baseline and to week 12 in patients treated continuously with Tofacitinib vs. switchers from placebo**

Also, these imaging endpoints is still under investigation and will be reported separately.

- **ASAS20 response at Week 12 and Week 24**

At week 12, 43% of patients treated with tofacitinib achieved an ASAS 20 response and 25% of patients treated with placebo. At week 24, all patients were treated with tofacitinib, and in the placebo-to-tofacitinib group, 58.3% of patients achieved ASAS 20 and 35.7% of patients who had received continuous tofacitinib (Figure 2).

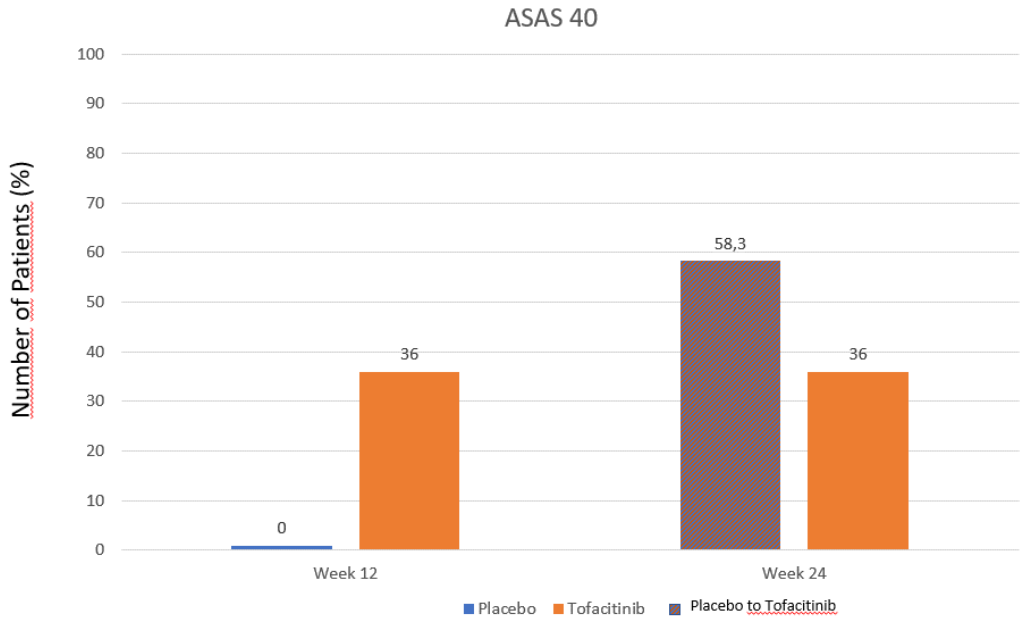
Figure 2: ASAS 20



- **ASAS40 response at Week 12 and Week 24**

At week 12, 36% of patients treated with tofacitinib achieved an ASAS 40 response and 0% of patients treated with placebo. At week 24, in the placebo-to-tofacitinib group, 58.3% of patients achieved ASAS 40 and 36 % of patients who had received continuous tofacitinib (Figure 3).

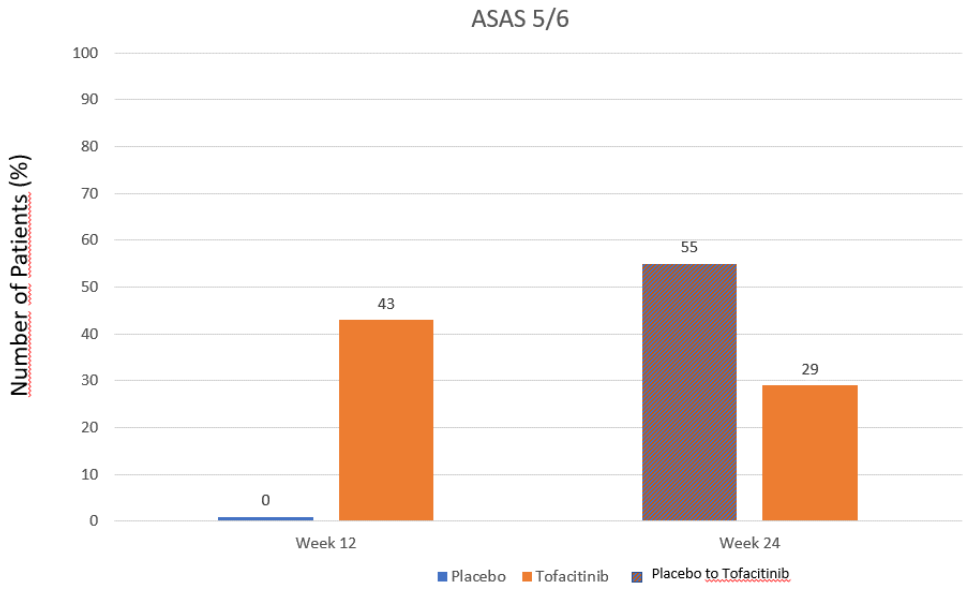
Figure3: ASAS 40



- **ASAS5/6 response at Week 12 and Week 24**

At week 12, 43% of patients treated with tofacitinib achieved an ASAS 5/6 response and 0% of patients treated with placebo. At week 24, in the placebo-to-tofacitinib group, 55% of patients achieved ASAS 5/6 and 29% of patients who had received continuous tofacitinib (Figure 4).

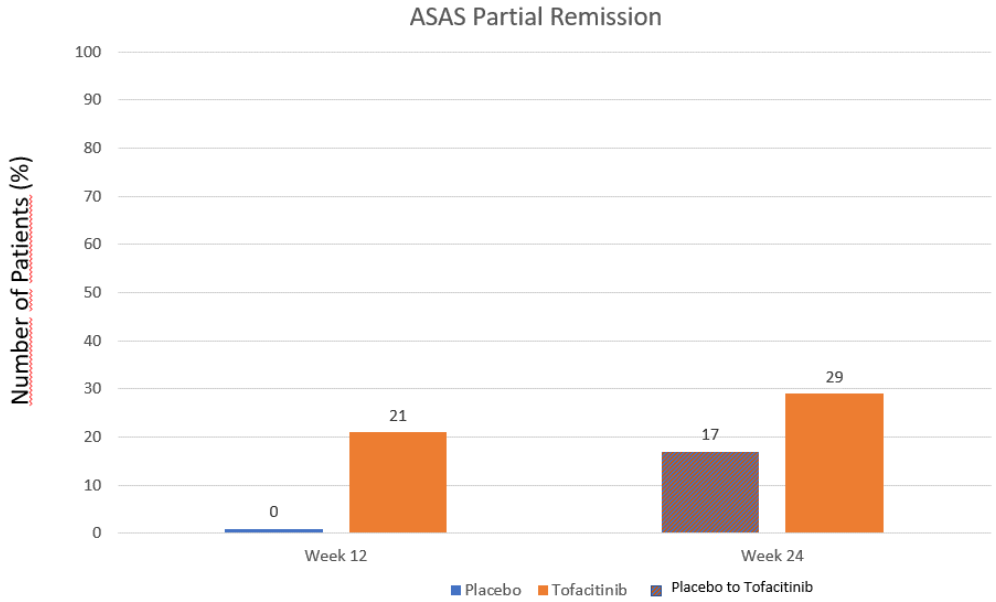
Figure 4: ASAS5/6



- **ASAS partial remission at Week 12 and Week 24**

At week 12, 21% of patients treated with tofacitinib achieved an ASAS Partial Remission response and 0% of patients treated with placebo. At week 24, in the placebo-to-tofacitinib group, 17% of patients achieved ASAS 5/6 and 29% of patients who had received continuous tofacitinib (Figure 5).

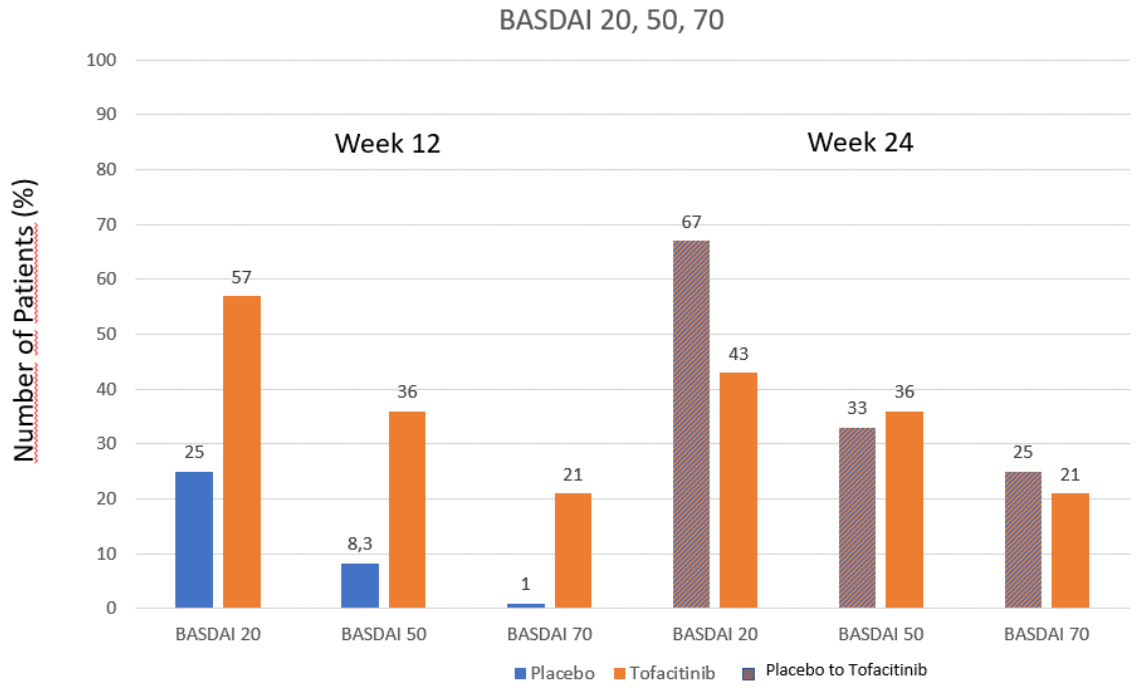
Figure 5: ASAS Partial Remission



- **BASDAI 20%, 50%, 70% improvement at Week 12 and Week 24**

At week 12, more patients in the tofacitinib group than in the placebo group achieved BASDAI 20, 50 and 70. At week 24, the former placebo group and the tofactinib group achieved similar values for BASDAI 20, 50 and 70 (Figure 6).

Figure 6: BASDAI 20, 50 and 70 improvements



- **Percentage of patients reaching the ASDAS clinically important improvement (≥1.1) and major improvement (≥2.0) at Week 12 & Week 24**

ASDAS-CRP improvement was reached in the tofacitinib group in 43% of patients after 12 weeks of therapy and at week 24 in both groups, continuously tofacitinib 36% and placebo to tofacitinib 50% (Figure 7). ASDAS-CRP major improvement was reached in the tofacitinib group in 14% of patients after 12 weeks of therapy and at week 24 in both groups, continuously tofacitinib 21% and placebo to tofacitinib 25% (Figure 8).

Figure 7: ASDAS Clinical Important Improvement

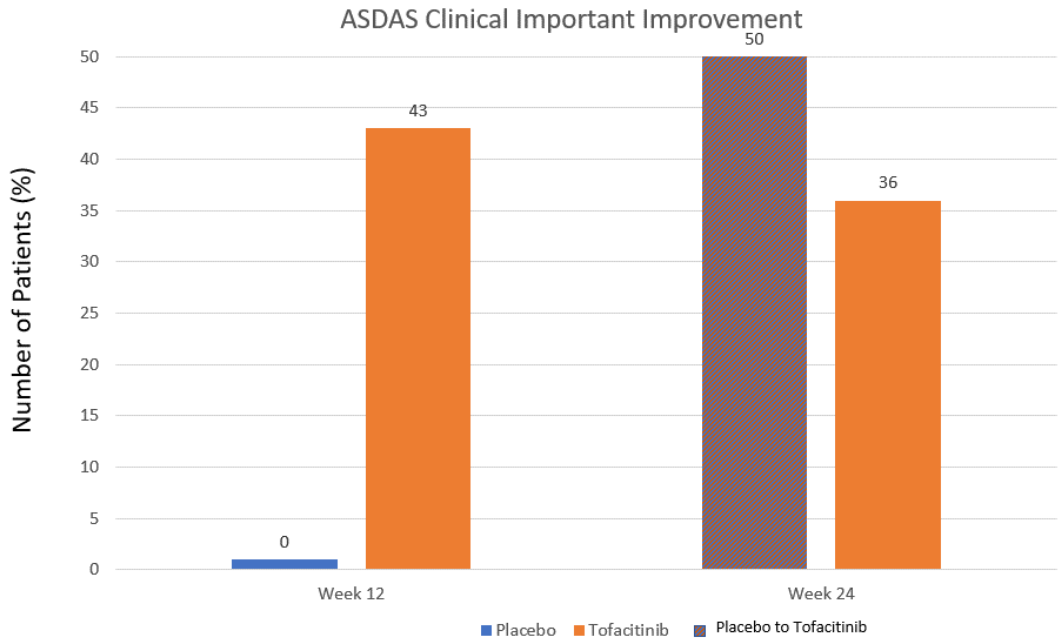
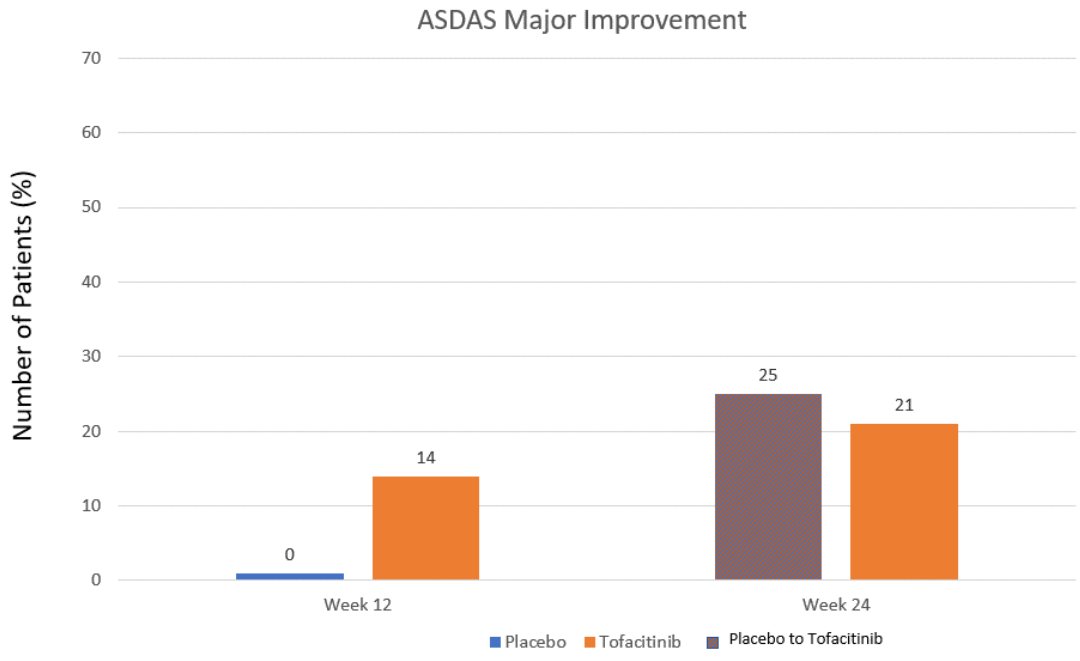


Figure 8: ASDAS Major Improvement



- **Percentage of patients achieving ASDAS inactive disease (ASDAS <1.3) and ASDAS low disease activity (ASDAS <2.1) at Week 12 and Week 24**

ASDAS inactive Disease was reached in the tofacitinib group in 14% of patients after 12 weeks of therapy and in no patient in the placebo group, at week 24 in the continuous tofacitinib group in 21% and placebo to tofacitinib 8.3% (Figure 9).
ASDAS low disease activity was reached in the tofacitinib group in 43% of patients after 12 weeks of therapy, in 8.3% of placebo treated patients and at week 24 in both groups, continuous tofacitinib 43% and placebo to tofacitinib 42% (Figure10).

Figure 9: ASDAS Inactive Disease

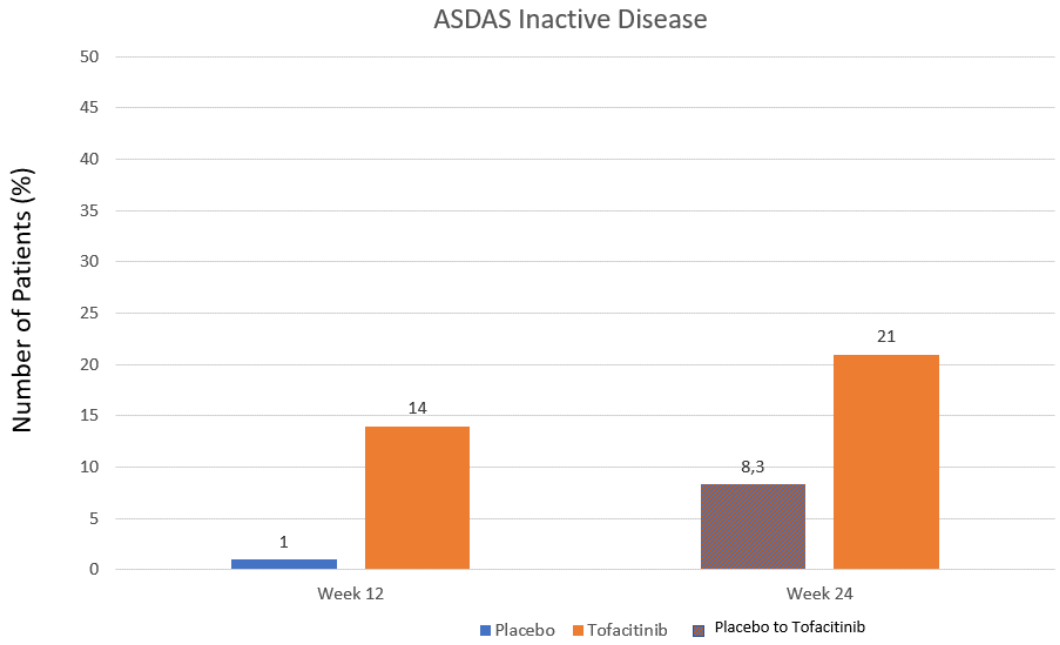
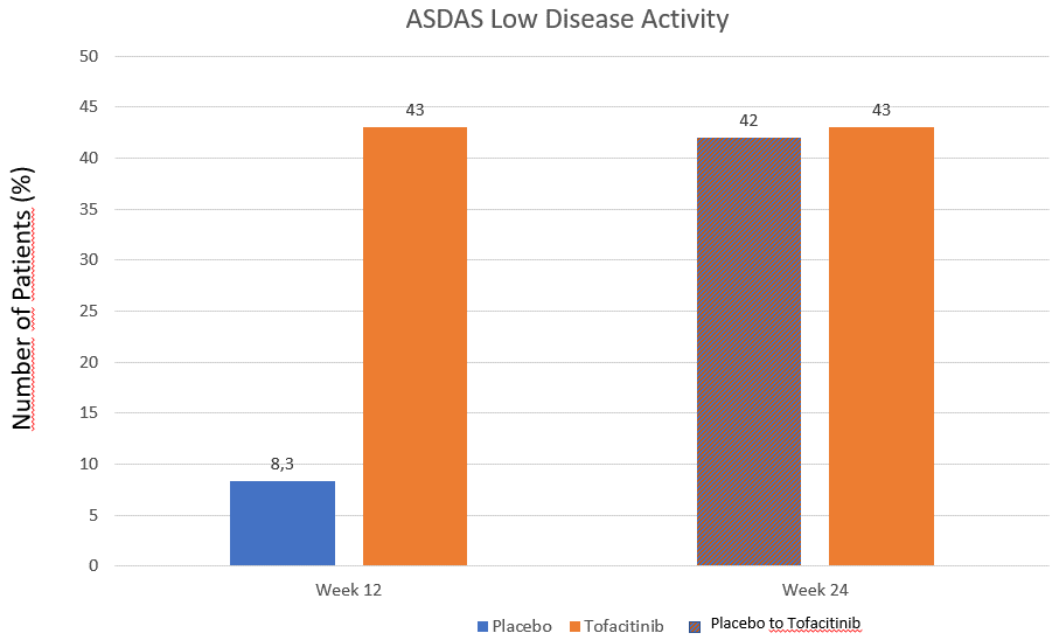


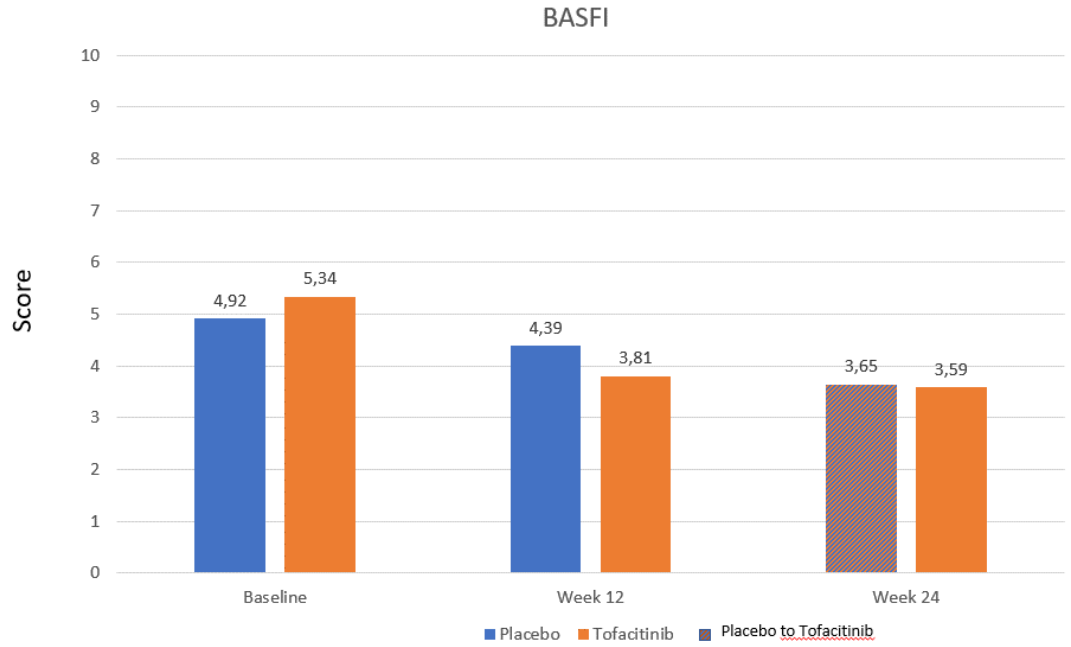
Figure 10: ASDAS Low Disease Activity



- **Improvement of function (BASFI)**

The BASFI decreased in the tofacitinib group in contrast to the placebo group at week 12 and in the placebo-tofacitinib group at week 24, while it remained low in the continuous tofacitinib group. The changes in BASFI over time are shown in Figure 11.

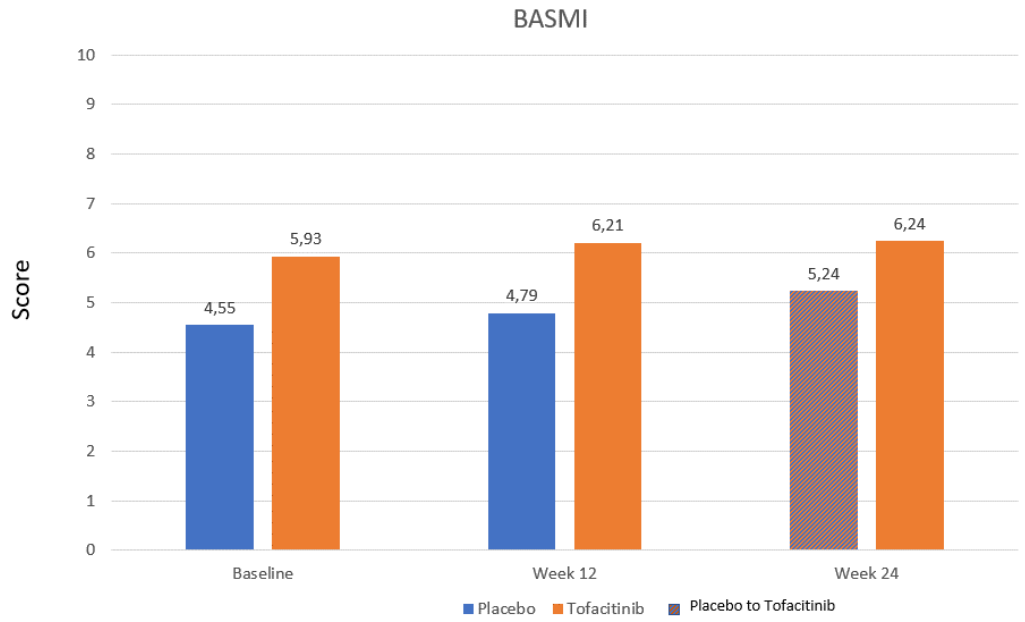
Figure 11: BASFI



- **Improvement of axial mobility (BASMI)**

There was no change in the BASMI in any group and at no timepoint, Figure 12.

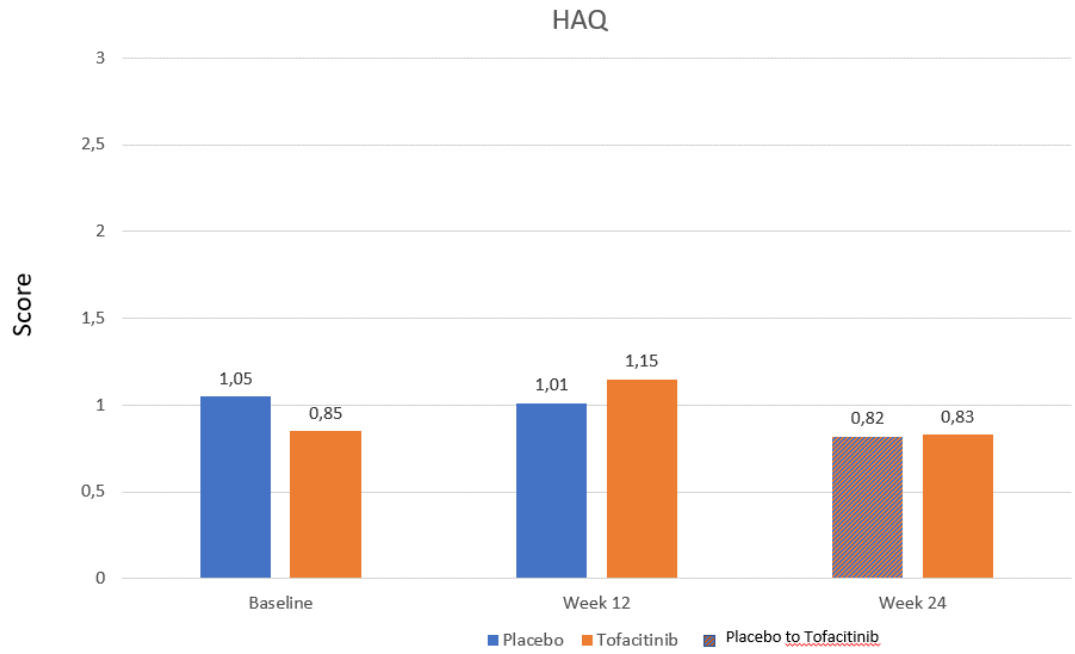
Figure 12: BASMI



- **Improvement in the Health Assessment Questionnaire-Disability Index (HAQ-DI)**

There were no clear differences in the HAQ-DI between the different groups and time points. Figure 13.

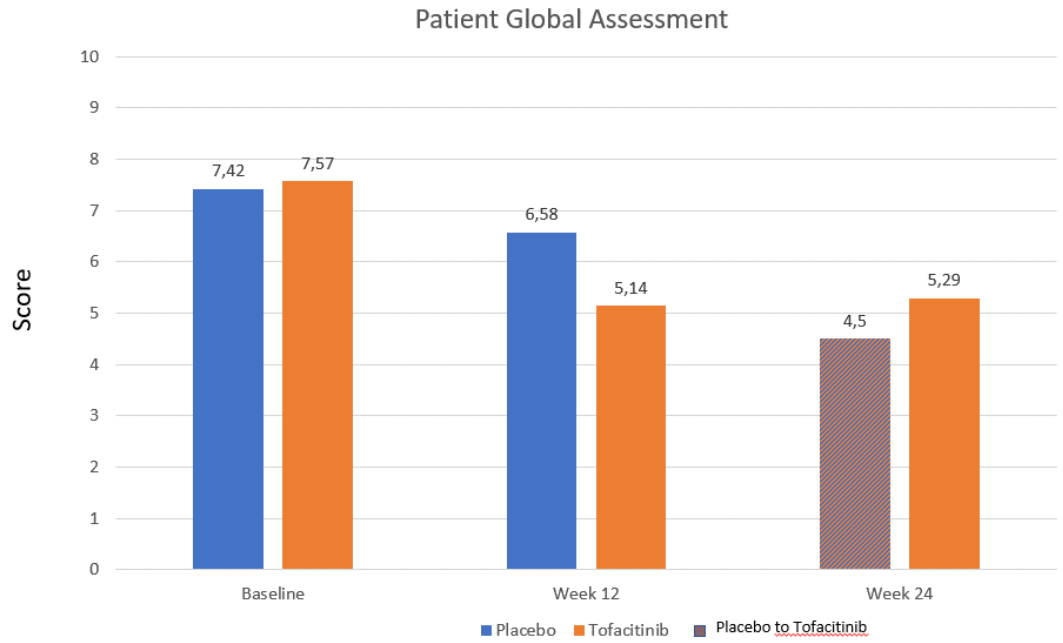
Figure 13: HAQ-DI



- **Improvement of patient global assessment on the NRS**

The patient global assessment was reduced in the treatment groups over time in contrast to the placebo group at week 12. Figure 14.

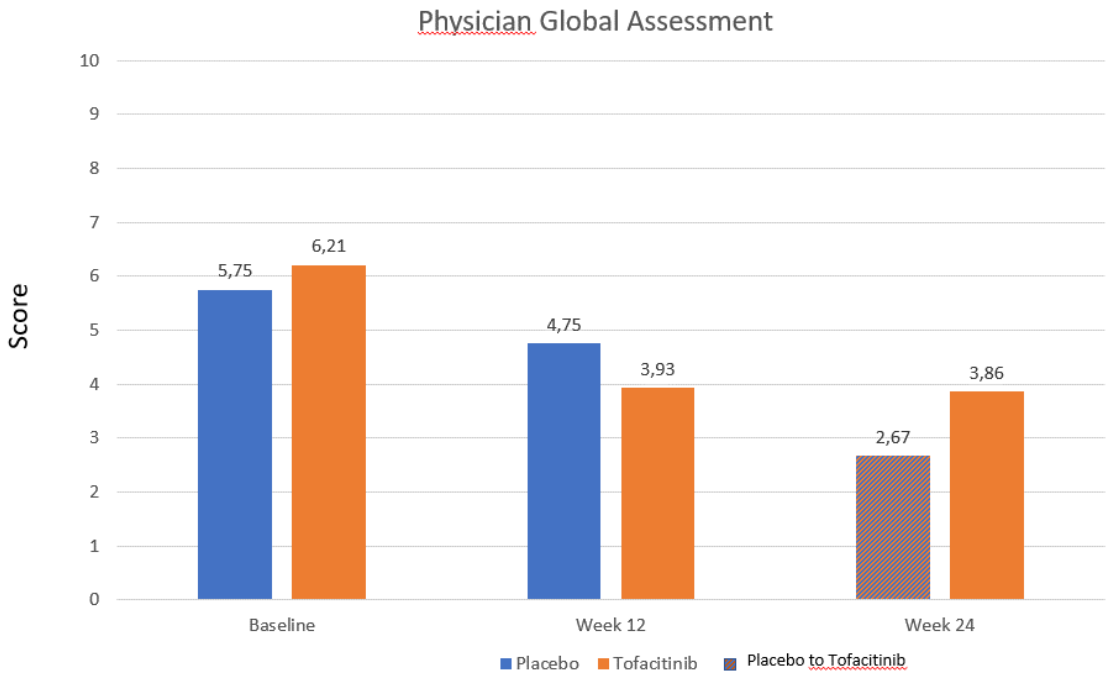
Figure 14: Patient Global Assessment



- **Improvement of physician global assessment on the NRS**

Also, in the physician global assessment there was a reduction over time in the treatment groups over time in contrast to the placebo group at week 12, Figure 15.

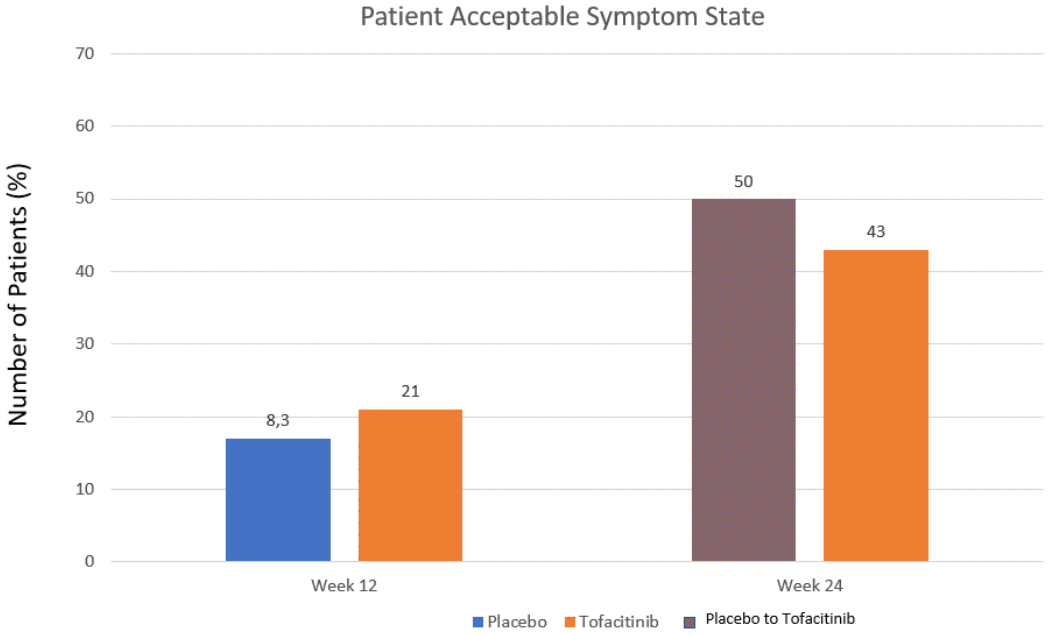
Figure 15: Physician Global Assessment



- **Achievement of the patient acceptable symptom state (PASS)**

More patients in the tofacitinib group reached the patient acceptable Symptom State (PASS) at weeks 12 and 24 as compared with the placebo group at week 12. At week 24 the placebo to tofacitinib group reached comparable results to the original tofacitinib group (Figure 16).

Figure 16: Patient acceptable Symptom State (PASS)

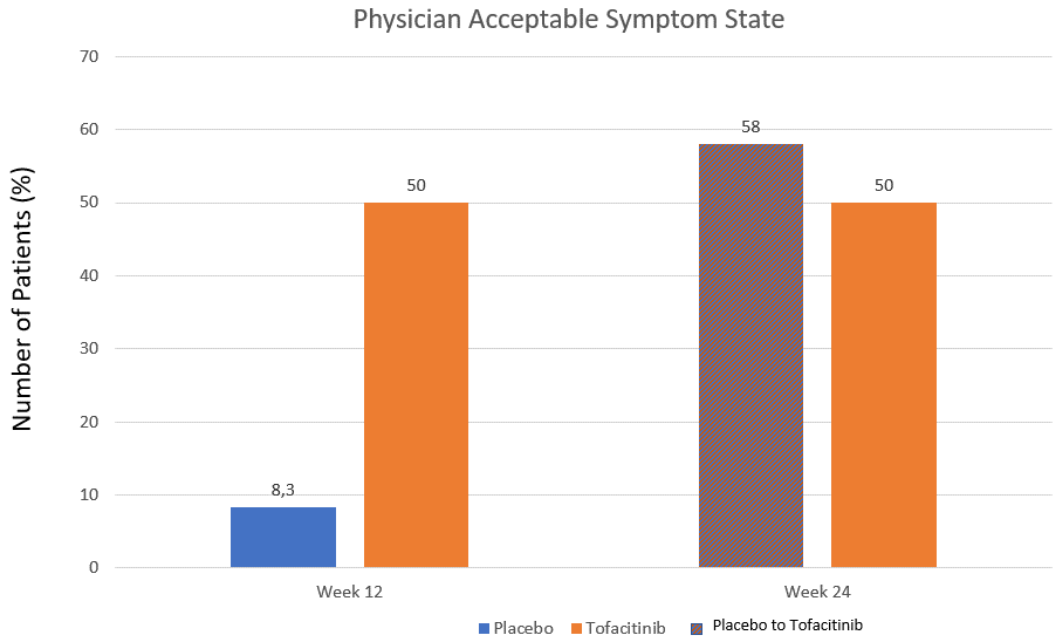


- **Achievement of the physician acceptable symptom state (PhASS)**

The physician acceptable symptom state (PhASS) was reached by 50% of patients treated with tofacitinib at weeks 12 and 24 and in 58% of patients who switched from placebo to

tofacitinib at week 24, whereas only 8,3% of patients in the placebo group at week 12 reached this score (Figure 17)

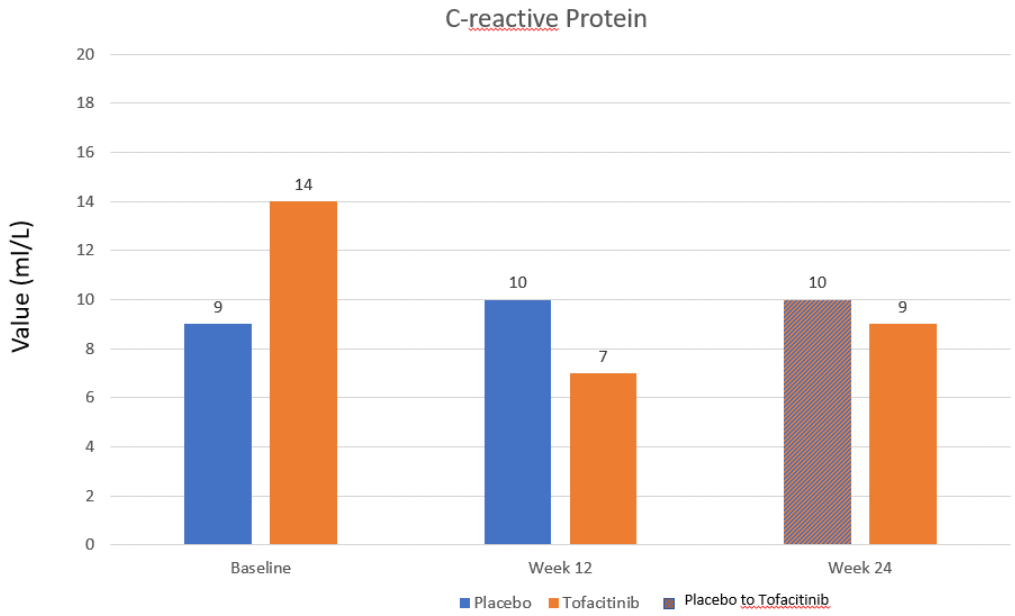
Figure 17: physician acceptable symptom state (PhASS)



- **Improvement in C-reactive Protein**

C-reactive protein decreased in the tofacitinib group at week 12 and 24 and in the placebo to tofacininib group at week 24 but not in the placebo group at week 12. C-reactive protein did not reach levels below normal (<5 mg/L) in any group at the group level (Figure 18).

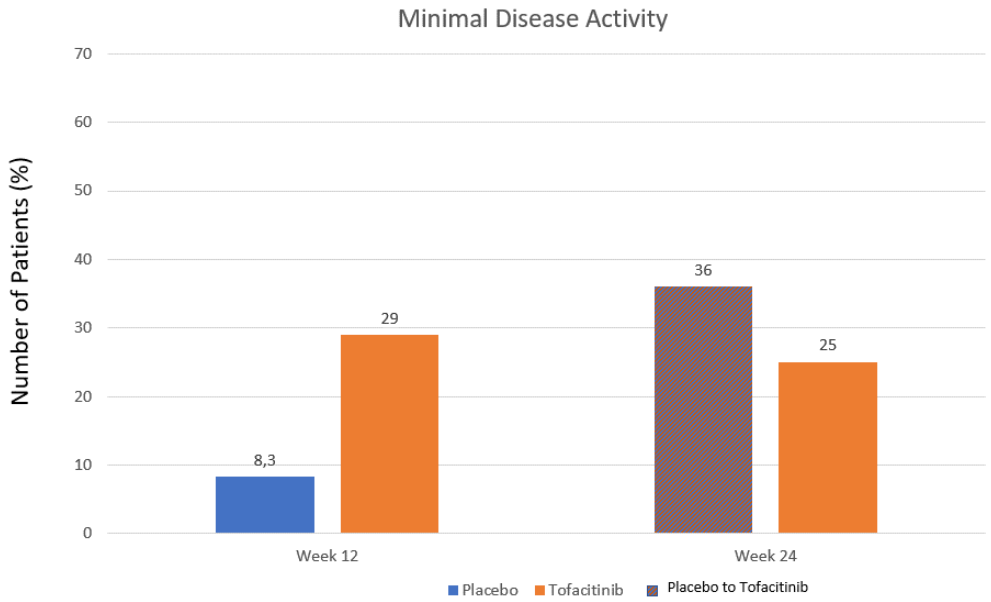
Figure 18: C-reactive Protein



- **Achievement of Minimal Disease Activity (MDA) at week 12 and 24**

The Minimal Disease Activity Score was reached by 29% of tofactinib treated patients at week 12 and 5% of patients at week 24 and in 36% of patients in the placebo to tofacitinib group at week 24 in contrast to 8.3% of patients with placebo at week 12 (Figure 19).

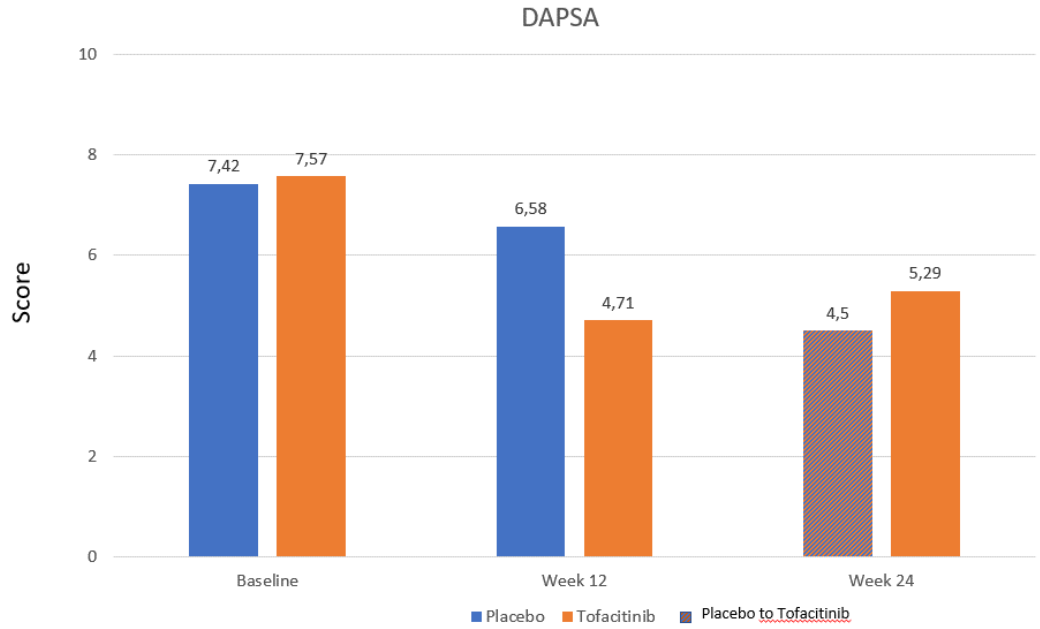
Figure 19: Minimal Disease Activity



- **Improvement in the Disease Activity Index for Psoriatic Arthritis (DAPSA)**

The Disease Activity Index for Psoriatic Arthritis (DAPSA) was reduced in the tofacitinib treated group at week 12 and 24 and in the placebo to tofacitinib group at week 24 and not in the placebo treated group at week 12 (Figure 20).

Figure 20: Disease Activity Index for Psoriatic Arthritis (DAPSA)



- **Improvement of swollen joint count (SJC) and tender joint count (TJC)**

The number of swollen joints clearly decreased in the tofacitinib group at weeks 12 and 24 and in the placebo to tofacitinib group at week 24 but not in the placebo treated group at week 12 (Figure 21). The number of tender joints decreased in the same groups in contrast to the placebo group)Figure 22).

Figure 21: Number of swollen joints (SJC)

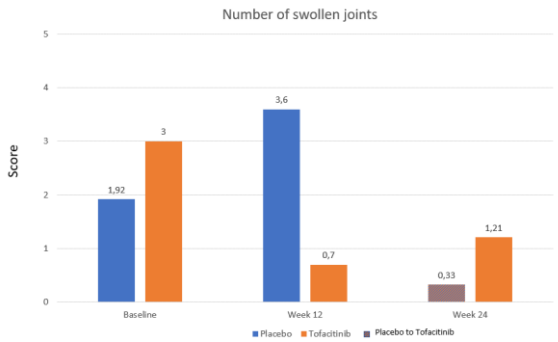
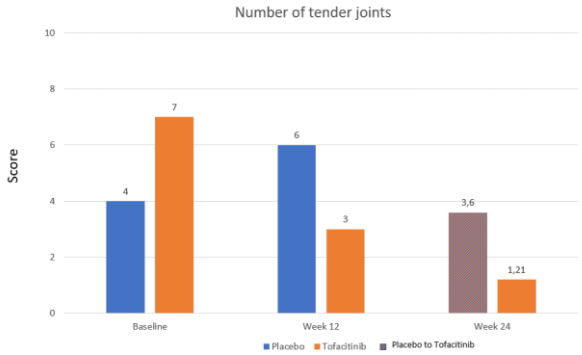


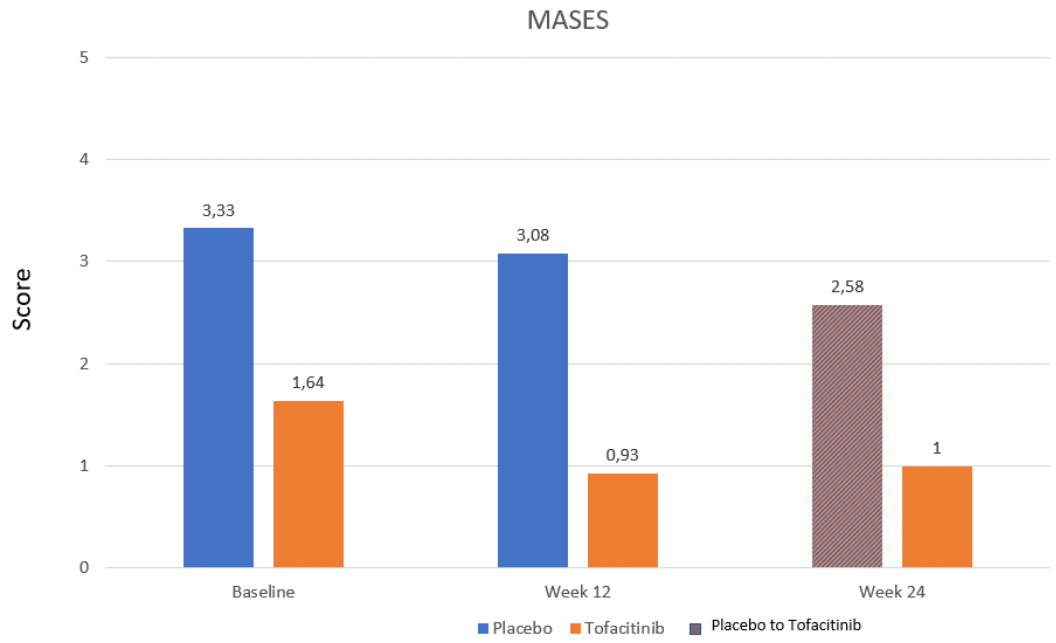
Figure 22: number of tender joints



- **Improvement of enthesitis based on the Maastricht Ankylosing Spondylitis**

The Maastricht Ankylosing Spondylitis Enthesitis Score (MASES) was lower in the tofacitinib group at Baseline. It decreased in the tofacininib treated group at week 12 and 24 and in the placebo to tofacitinib group at week 24 but not in the placebo group at week 12 (Figure 23).

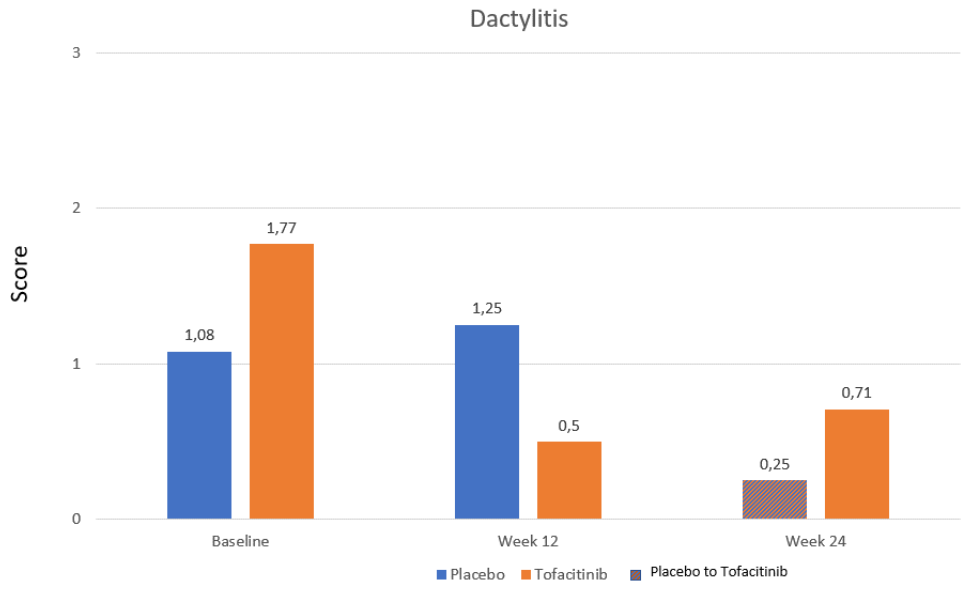
Figure 23: Maastricht Ankylosing Spondylitis Enthesitis Score (MASES)



- **Improvement of dactylitis (count of dactylitic phalanges)**

The count of phalanges with dactylitis decreased in the tofacitinib group at week 12 and 24 and in the placebo to tofacitinib group at week 24, while it remained stable in the placebo group at week 12 (Figure 24).

Figure 24: Dactylitis count



- **PASI (Psoriasis Activity and Severity Index**

The PASI decreased in the tofacitinib group at week 12 but not at week 24 anymore. It did not change in the placebo to tofacitinib group at week 24 and in the placebo group at week 12 (Figure 25)

Figure 25: PASI Score