Background: Juvenile Idiopathic Arthritis (JIA) is the most common auto-immune disease in children and pain is a common symptom. Despite treatment advances in recent years, pain often persists when the disease is inactive. Treating JIA to target has been widely recommended, but effectiveness in pain reduction has not been proven yet.

Objectives: To compare pain scores over two years in three treatment arms in JIA patients that were treated to target and to identify baseline characteristics predicting unfavorable pain outcomes.

Methods: DMARD naïve children who participated in the BeSt for kids study with oligoarticular JIA, RF negative polyarticular JIA and juvenile psoriatic arthritis were included. Patient were treated to target aimed at inactive disease according to 1 of 3 different treatment groups: 1) initial sequential DMARD monotherapy, 2) initial methotrexate (MTX) with prednisolone bridging or 3) initial MTX with etanercept. Pain intensity was measured using a 100 mm Visual Analogue Scale during 24 months of follow up with 3-monthly intervals. Potential differences in VAS pain scores over time between treatment arms were compared using linear mixed models with random intercept and random slope for visits clustered within patients. A similar multivariable mixed model was used to assess the ability of multiple baseline characteristics to predict the chance of high pain levels during follow-up.

Results: 92 patients were randomized into the three treatment groups. Overall, pain scores over time reduced from mean 55.3 (SD 21.7) at baseline to 19.5 (SD 25.3) after 24 months. When comparing pain over time per arm, pain scores decreased significantly over time β -1.37 (95% CI -1.726; -1.022). No significant difference was found in pain over time between treatment groups (interaction term treatment arm*time (months) β (95% CI) arm 1 0.13 (-0.36; 0.62) and arm 2 -0.12 (-0.82; 0.6) compared to arm 3). Figure 1. Correction for sex and symptom duration as possible confounders yielded similar results. Multiple baseline characteristics demonstrated a significant predictive value for pain over time: VAS pain (scale 0-100) with β 0.44 (95% CI 0.25; 0.65), VAS physician (scale 0-100) with β -0.34 (-0.55; -0.06), number of active joints with β 0.77 (0.19; 1.34), Child Health Questionnaire Physical summary Score with β 0.77 (0.19; 1.34), and Psychosocial summary Score with β -0.42 (-0.72; -0.11). Symptom duration, VAS patient/parent and NSAID use were no significant predictors, Table 1.

Conclusion: Treatment to target seems effective in pain reduction in non-systemic JIA patients irrespective of initial treatment strategy. Several baseline predictors for pain over time were identified, which could serve as an initial indication for non-systemic JIA-patients with a high risk of pain despite a strict treat-to-target strategy.

REFERENCES: