PAIN RELIEF, FUNCTIONAL RECOVERY AND ASSOCIATED MEDICAL TREATMENTS REDUCTION IN LARGE-SCALE POPULATION WITH OSTEOARTHRITIS RECEIVING INJECTIONS OF VISCOSUPPLEMENT INCORPORATING HIGH CONCENTRATION OF SORBITOL

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Purpose: Synolis V-A is a visco-antalgic composed of highly concentrated non-crosslinked hyaluronic acid (2%) from biofermentation origin combined with a high concentration of Sorbitol (4%). Sorbitol is an endogenous molecule which functions as an oxygen free radical (ORF) scavenger. We hypothesize that anti-oxidant effect of sorbitol may play an active role in rapid and strong pain reduction in patients with osteoarthritis, and therefore influence function recovery and medication intake reduction.

Methods: 1147 patients with a majority suffering from knee Osteoarthritis (92.9%), were enrolled in a Non-Interventional Study conducted in 398 centres in Germany. Studied population had an average age of 63.3 years, including 499 males and 614 females, and was distributed into the following grades according to Kellgren-Lawrence scale: Grade I – 0.7%, Grade II – 31.4%, Grade III – 48.0% and Grade IV – 13.9%. Patients were assessed for pain level and functional impairment using 5 points Likert scale (scoring from 0 – None to 4 – Very Severe). Patients received between 1 and 3 intraarticular (IA) injections of 2 ml of Synolis V-A. Selected primary criteria were variations of pain and function impairment scores, between baseline and following the time points: week 1, week 12 and week 24. Selected secondary criterion was the evaluation of concomitant medical treatments (topical, NSAID, corticosteroids and analgesics) prior to treatment initiation and at week 24.

Results: Selected Histological Measures from Best Subset Regression Modeling: Average pain level (pooled data) scored at 2.61 (n = 1125) at baseline, 1.68 (n = 852) at week 1, 1.14 (n = 1085) at week 12 and 1.07 (n = 1030) at week 24. Average functional impairment level (pooled data) scored at 1.99 (n = 1103) at baseline, 1.47 (n = 819) at week 1, 1.07 (n = 1074) at week 12 and 1.02 (n = 1031) at week 24. Patients with no reported medical treatment increased by 120%, from 354 patients before treatment initiation to 780 at week 24. Average daily medication per patient decreased by 72% from 1.30 before treatment initiation to 0.37 at week 24. Out of 1147 patients only 24 adverse events (AEs) were reported for 22 patients (1.9%), the most common Adverse Event being “Injection site joint pain”.

Conclusions: This study suggests that a strong pain relief occurs immediately after the first injection of Synolis V-A, with a relief that amplifies until week 24. Functional improvement had been observed to follow a similar trend than pain relief. With a baseline score slightly lower, the amplitude of the observed improvement was also slightly inferior to that of pain relief. Never-the-less, both average scores ended at week 24. The trend similarities between pain relief and functional improvement suggest a direct link between both factors; link that can be explained by the impact of pain on loss of function. Not surprisingly, pain reduction and function recovery were associated with an important drop in medication intake.

THE RELATIONSHIP BETWEEN MENTAL HEALTH AND FOOT PAIN

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Purpose: Although mental health is related to the persistence of musculoskeletal pain, our understanding of the association between mental health and foot pain is limited. Subsequently, we conducted a three year longitudinal study to examine in a community based population.

Methods: Eighty-three community dwelling participants (mean body mass index 35.3 kg/m² ± 9.0) who had foot pain at study inception in 2008, and for whom measures of mental health (Mental Component Summary of the Short Form-36) were available, were invited to take part in this follow-up study in 2011. Change in foot pain was determined by the difference between the Manchester Foot Pain and Disability Index score at baseline and follow up; therefore, a decrease in the score indicates improved foot pain and an increase indicates deterioration in foot pain. Linear regression was used to determine the factors affecting change in foot pain.

Results: Of the 62 respondents (75% response rate, 49 females and 13 males), there were 22 (45%) who had no change in their foot pain over years. A higher Mental Component Summary score of the Short Form-36 at baseline was associated with a slower progression of foot pain (beta coefficient –0.29, 95% confidence interval –0.42 to –0.01); adjusted for age, sex, body mass index and physical health.

Conclusion: Mental health is associated with changes in foot pain. Clinicians dealing with this population should consider the contribution of mental health in their management and treatment of foot pain.

PAIN: CLINICAL

731 CROSS-SECTIONAL AND LONGITUDINAL ASSOCIATIONS BETWEEN KNEE JOINT EFFUSION AND KNEE PAIN IN OLDER ADULTS

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Purpose: Knee pain is one of the most prominent symptoms of osteoarthritis (OA). Joint synovial effusion could contribute to pain, but the relationship between knee effusion and knee pain remains controversial. Effects of joint effusions at different knee compartments on knee pain are unclear. Aim of this study was to determine the cross-sectional and longitudinal associations between knee joint effusions at different compartments and knee pain in older adults.

Methods: Population-based cohort study of older adults randomly selected from local community (N = 976, mean age 62.3 years, range from 50 to 80; 50.1% females). Knee joint effusions were measured at baseline using T2 weighted magnetic resonance imaging (MRI) at 4 compartments (suprapatellar pouch, central portion, posterior femoral recess, and subpopliteal recess). Other structural changes including cartilage defects, bone marrow lesions and meniscal lesions were assessed by MRI. OARSI atlas was used to assess knee osteophytes, joint space narrowing (JSN) and radiographic OA. Knee pain was assessed by self-administered Western Ontario and McMaster osteoarthritis index (WOMAC) questionnaire at baseline and 2.6 years later. The WOMAC pain subscales were clinically constructed into weight-bearing pain (including pain when walking on a flat surface, going up/down stairs, and when standing) and non-weight-bearing pain (including pain at night while in bed and when sitting/lying). Univariate and multivariable logistic regression analysis and generalized linear models with Poisson regression analysis were used to estimate prevalence ratios (PR) or relative risks (RR) for the association between knee effusion (0–3) and baseline or increases in knee pain.

Results: Prevalence of knee joint effusion (≥2) was 42.9% at suprapatellar pouch, 48.8% at central portion, 10.3% at posterior femoral recess and 14.4% at subpopliteal recess. Cross-sectionally, knee effusion at suprapatellar pouch was significantly associated with total (PR: 1.26, 95% CI 1.08–1.48) and non-weight-bearing knee pain (PR: 1.24, 95% CI 1.06–1.46), but not with weight-bearing pain, after adjustment for age, gender, BMI, rheumatoid arthritis, radiographic OA and other knee structures. Joint effusions at other compartments were not significantly associated with knee pain.

Longitudinally, effusion at suprapatellar pouch was associated with increases in total (PR: 1.20, 95% CI 1.00–1.44), non-weight-bearing (RR: 1.38, 95% CI 1.09–1.75) and weight-bearing knee pain (RR: 1.26, 95% CI 1.04–1.53) after adjustment for above covariates. Effusions at posterior femoral recess and central portion were associated with increases in non-weight-bearing knee pain (RR: 1.55, 95% CI 1.25–1.91 and RR: 1.29, 95% CI 1.01–1.65; respectively) but not with weight-bearing knee pain. Effusion at subpopliteal recess was significantly associated with an increase in total knee pain (RR: 1.16, 95% CI 1.01–1.32) after adjustment for age, sex and BMI, but became non-significant after further adjustment for radiographic OA and other knee structures.

Conclusions: Knee joint effusions may have compartment-specific contributions to knee pain in older adults. While suprapatellar pouch effusion is associated with both non-weight-bearing and weight-bearing knee pain, posterior femoral recess and central portion effusions are only associated with non-weight-bearing knee pain.