SAT0556

COST-EFFECTIVENESS OF A BLENDED PHYSIOTHERAPY INTERVENTION IN PATIENTS WITH HIP AND/OR KNEE OSTEOARTHRITIS: A CLUSTER RANDOMISED CONTROLLED TRIAL

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Background: Physiotherapy, consisting of education, graded activity and exercises, is effective in improving levels of physical functioning and pain in patients with osteoarthritis (OA) of hip and/or knee. Blended physiotherapy, in which physiotherapy sessions and an online application are integrated, might support patients in taking an active role in the management of their condition and may reduce disease related costs. Recently, the blended physiotherapy intervention e-Exercise was developed. ^{Bossen 2016} E-Exercise is an integration of five face-to-face physiotherapy sessions with an online application consisting of information-, exercise-, and a graded activity module.

Objectives: To evaluate the cost-effectiveness of e-Exercise compared to usual physiotherapy in patients with OA of hip and/or knee, from the societal as well as the healthcare perspective.

Methods: This economic evaluation was conducted alongside a 12 month cluster randomised controlled trial, in which 108 patients received e-Exercise and 99 patients received usual physiotherapy. Clinical outcome measures were quality-adjusted life years (QALYs) according to the EuroQol (EQ-5D-3L), physical functioning (HOOS/KOOS) and physical activity (Actigraph Accelerometer). Costs were measured using self-reported questionnaires. Missing data were multiply imputed and bootstrapping was used to estimate statistical uncertainty.

Results: Total societal costs and total healthcare costs did not significantly differ between groups. Intervention costs (ΔC € -202; 95% CI: -286 tot -120) and medication costs (ΔC € -151; 95% CI: -340 tot -52) were significantly lower in e-Exercise compared to usual physiotherapy. No significant differences in effectiveness were found between groups (QALYs (0-1): B=0.01; 95% CI: -0.03 till 0.04; HOOS/KOOS (0-100): B=1.49; 95% CI: -4.70 till 0.69; Accelerometer (min/dag): B=-3.46; 95% CI: -11.66 till 4.73). For physical functioning and physical activity, the maximum probability of e-Exercise being cost-effective compared to usual physiotherapy was moderate (<0.82) from both perspectives. For QALYs, the probability of e-Exercise being cost-effective compared to usual physiotherapy was 0.68/0.84 at a willingness to pay of € 10.000,- and 0.70/0.80 at a willingness to pay of € 80.000,- per gained QALY, from respectively the societal and the healthcare perspective.

Conclusions: E-Exercise itself was significantly cheaper compared to usual physiotherapy in patients with hip and/or knee OA, but not cost-effective from the societal- as well as healthcare perspective. The decision between both interventions can be based on the preferences of the patient and the physiotherapist.

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SAT0557

10-YEAR TRAJECTORIES OF PAIN IN EARLY KNEE AND HIP OSTEOARTHRITIS; THE CHECK STUDY

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Background: Osteoarthritis (OA) is one of the leading causes of chronic pain worldwide. Yet, relatively little is known about the trajectories of pain in early knee and hip OA.

Objectives: To determine subgroups of patients with homogenous patterns of pain over 10 years follow-up, among patients with early hip and/or knee complaints in primary care.

Methods: Data from the CHECK cohort (Cohort Hip and Cohort Knee) were used. For this cohort, 1002 patients between 45 and 65 years at or within 6 months from their first consultation at a general practitioner for symptoms of their hips and/or knees, were included and followed for 10 years. A numeric rating scale (NRS) for perceived pain was obtained at baseline and after 2, 5, 8 and 10 years, or until total joint replacement. Using these longitudinal data, subgroups of patients with comparable trajectories over time were identified using Latent Class Growth Analysis (LCGA). Models with 3 to 6 classes when using linear, cubic and quadratic trajectories were evaluated using Mplus software.

Results: At baseline, the 998 subjects (79% women) with ≥ 2 NRS data points available had a mean age of 55.9 $\pm$ 5.2 years and a mean BMI of 26.2 $\pm$ 4.0 kg/m². In total, 410 patients reported knee pain only (41%), 173 hip pain only (17%), and 415 reported both knee and hip pain (42%) at baseline. On a joint level, 156 knees and 160 hips had KL-grade ≥ 2 at baseline.

The by LCGA derived models of 3 groups with a linear trajectory and of 6 groups with a cubic trajectory resulted in comparable goodness of fit indicators (Bayesian Information Criteria 17 991 vs. 17927, Akaike Information Criteria 17 927 vs. 17761, and entropy 0.694 vs. 0.683 for the 3 and 6 group models, respectively). Both models and the corresponding trajectories are presented in the figure 1. In the 3 group model, the 'high pain trajectory' (group 2, blue line, n=206) contained most patients with knee and hip complaints (53%), females (84%), TJR (21%), and the highest mean BMI (27.6 $\pm$ 4.6). The 'low pain trajectory' (group 3, green line, n=441) contained most patients with only hip (19%) and only knee (48%) complaints, and the lowest mean BMI (25.3 $\pm$ 3.6).

In the 6 group model, the 'always high pain trajectory' (group 1, red line, n=176) contained most females (86%) and TJR (24%), and the highest mean BMI (27.7 $\pm$ 4.7). The 'always low pain trajectory' (group 5, brown line, n=289) contained most patients with only knee complaints (51%) and the lowest mean BMI (25.0 $\pm$ 3.4). The 'decreasing pain trajectory' (group 2, blue line, n=37) contained most patients with only hip complaints (22%). The 'fluctuating high pain trajectories' (groups 3 (n=88) and 4 (n=142), green and pink lines) contained most females (3:83% and 4:86%), and patients with knee and hip complaints (3:61% and 4:44%).

Conclusions: The 6 group model identified more extreme groups with lower minimal and higher maximal prevalence of the presented clinical characteristics. In the end, the conclusion drawn from the two models appear similar; Patients presenting with both knee and hip complaints had less favourable pain trajectories over the following 10 years and the number of total joint replacements was the highest in the groups always reporting high pain scores.

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SAT0558

PHARMACOTHERAPY OF OBESITY IN PATIENTS WITH KNEE OSTEOARTHRITIS AND METABOLIC SYNDROME

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Background: Osteoarthritis (OA) is one of most common diseases of locomotor system. Different OA phenotypes are currently identified, including metabolic OA associated with meta-inflammation induced by obesity and metabolic syndrome.

Objectives: To assess orlistat pharmacotherapy in patients with knee OA (KOA) and metabolic syndrome.

Methods: 50 female patients with Kellgren-Lawrence stage II-III KOA were randomised into 2 equal groups in a 6 months study. All pts were administered lifestyle

changes by increasing physical activity and limiting calories (1200 kcal), and patients from Group 1 were additionally treated with orlistat 120 mg 3 times a day. WOMAC and EQ-5D scores and anthropometric data were regularly obtained during the study; biochemistry panel (lipid profile, glucose, CRP), leptin and interleukin-6 were assessed at baseline and at Mo 6.

Results: Metabolic syndrome (MS) was diagnosed at baseline in 41 patients. Following orlistat therapy pts from Group 1 managed to reduce their body weight by 10,07% ($p<0,05$; Fig 1), and waist circumference (WC) by 7,5% ($p<0,05$), improving the clinical course of OA: total WOMAC score was reduced by 55% ($p<0,05$; Fig 2), and EQ-5D quality of life was improved by 44% ($p<0,05$). Patients from Group 2 lost only 0,88% of their body weight versus the baseline, and reduced WC by 1%, without changes in EQ-5D scores. MS lab parameters – lipid profile and glucose – did not change significantly after orlistat treatment in Group 1. Patients from Group 2 showed significant increase in total cholesterol ($p<0,05$) after 6 months of dieting and exercising, revealing direct correlation between raised LDL and triglycerides levels and total WOMAC scores. CRP dropped by 23,74% ($p>0,05$) in Group 1. More pronounced decrease of CRP was observed in pts losing more than 10% of their body weight ($p=0,07$). Statistically significant decrease in leptin and IL-6 levels was documented in pts with orlistat-induced significant weight loss ($p<0,05$).

Abstract SAT0558 – Figure 1. Body mass reduction (kg, $p<0,05$).

Abstract SAT0558 – Figure 2. Dynamics of total WOMAC score ($p<0,05$).

Conclusions: Abdominal obesity is considered to be the major component of MS and key risk factor for the development and progression of knee OA. Our study demonstrates that induced by orlistat, diet and exercise weight loss by >10% improves the clinical course of KOA and patient's quality of life, reduces activity of inflammation and improves key parameters of metabolic syndrome. Therefore, KOA and MS therapeutic strategies should include pharmacotherapy of obesity in patients who fail to lose weight with the diet and physical exercise only.

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SAT0559

SYSTEMATIC LITERATURE REVIEW (SLR) FOR THE 2018 UPDATE OF THE EULAR MANAGEMENT RECOMMENDATIONS FOR HAND OSTEOARTHRITIS (OA)

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Background: As part of the update of the EULAR management recommendations an SLR of available evidence for hand OA treatment was performed.

Objectives: To inform the task force of an overview of available evidence for the efficacy and safety of all non-pharmacological, pharmacological and surgical interventions for hand OA.

Methods: We searched Medline, EMBASE, Cochrane Central, and 2016–2017 conference abstracts until June 2017 for (randomised) controlled trials or Cochrane reviews. Observational studies with a comparator were included to assess safety, or effects of surgical interventions. Main efficacy outcomes were pain, function, and hand strength. Risk of bias was assessed. Meta-analysis was performed if possible.

Results: Of 7036 records, 127 references were included, of which 50 studies concerned non-pharmacological, 64 concerned pharmacological, and 12 concerned surgical interventions. Most trials were published after 2007. Many studies were at high risk of bias, mainly due to inadequate randomisation or lack of blinding. Overall, effect sizes of effective therapies were small. Beneficial non-pharmacological treatments for pain relief include hand exercise, and prolonged splinting of the thumb base (Table). A single trial showed that assistive devices had no effect on pain, but led to functional improvements (mean difference (MD) -0.3, 95% confidence interval (CI) -0.6;0.01 on AUSCAN function, range 1–5). Topical and oral non-steroidal anti-inflammatory drugs (NSAIDs) proved equally effective for pain relief (Table), while topical NSAIDs led to less adverse events (e.g., risk ratio for withdrawals due to adverse events 0.15, 95% CI 0.03;0.63). Single trials demonstrated beneficial effects for other pharmacological interventions, including chondroitin sulphate, and intra-articular (i.a.) glucocorticoid injections in interphalangeal joints (Table). Compared to placebo, no beneficial effects were demonstrated for i.a. glucocorticoid or hyaluronic acid injections in the thumb base, hydroxychloroquine, or tumour necrosis factor inhibitors (Table). In two trials, structure modification was the primary outcome measure, though no disease-modifying properties were found in these studies. In a Cochrane review no surgical intervention for thumb base OA appeared more effective than another, although in general, more complex procedures led to more complications.

Abstract SAT0559 – Table 1. Effect on pain of main non-surgical interventions for hand OA from controlled trials.

Intervention	Control	N patients (studies)	Duration	OA type or location	Rob	Difference?	Effect estimate [95% CI]
Non-pharmacological interventions							
Hand exercise	No exercise	381 (5)	12 w	-	High	Intervention better	SMD -0.27 [-0.47; -0.07]
Joint protection	No joint protection	257 (1)	26 w	-	High	No	MD -0.79 [-1.7; 0.12] on AUSCAN pain (range 0-20)
Thumb splint	Usual care or no intervention	221 (4)	4-6 w	CMC	High	No	MD -2.9 [-12.2; 6.3] on 100 mm VAS
		137 (2)	13-52 w	CMC	High	Intervention better	MD -17.4 [-25.6; -9.2] on 100 mm VAS
Long thumb splint (MCP + CMC joint)	Short thumb splint (only CMC joint)	185 (3)	2-12 w	CMC	High	No	MD -0.85 [-5.1; 3.4] on 100 mm VAS
DIP splint	No intervention	26 (1)	12 w	DIP	High	No	Median difference -0.5 [range -7.3; 5.3, p-value 0.53] on 10 cm VAS
Assistive devices	Information provision	70 (1)	12 w	-	High	No	MD 0.4 [-9.8; 10.6] on 100 mm VAS
Pharmacological interventions							
Topical NSAID	Topical placebo	385 (1)	8 w	-	Low	Intervention better	MD -5.9 [-11.7; -0.06] on 100mm VAS
Topical NSAID	Oral NSAID	381 (2)	3 w	"activated" IP OA	Low	No	SMD -0.05 [-0.27; 0.17] (1 trial, n=321)
Oral NSAID	Placebo	695 (3)	2-4 w	-	Low	Intervention better	SMD 0.40 [0.20; 0.60] (2 trials, n=654)
Chondroitin sulphate	Placebo	162 (1)	26 w	-	Low	Intervention better	MD -8.7 [-0.016] on 100mm VAS
I.a. glucocorticoids	I.a. placebo	206 (3)	26 w	CMC	Low/unclear	No	MD -3.6 [-13.9; 6.8] on 100mm VAS (2 trials, n=166)
I.a. glucocorticoids	I.a. placebo	60 (1)	12 w	IP	Low	Intervention better	MD -18.0 [-35.5; -2.8] on 100mm VAS
I.a. hyaluronic acid	I.a. placebo	235 (3)	26 w	CMC	Unclear	No	MD 3.3 [-5.2; 11.8] on 100mm VAS (1 trial, n=123)
Hydroxychloroquine	Placebo	503 (3)	24-52 w	-	Unclear	No	MD 2.9 [-5.4; 9.2] on 100mm VAS (2 trials, n=307)
TNF inhibitor	Placebo	233 (3)	24-52 w	Erosive OA	Low	No	MD 4.9 [-12.2; 8.2] on 100mm VAS (2 trials, n=173)

Conclusions: The number of trials in hand OA has steeply increased over the last decade, providing evidence for several therapeutic options for symptom relief, though no disease-modifying drugs have yet been found. High-quality trials investigating often used analgesics like paracetamol are needed.

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