**Figure 1: Participant Flow chart**

Assessed for eligibility
(n= 787)

Randomised (n= 199)

Not eligible (n= 500)

* 325 (65%) hip pain predominantly due to other disorders
* 163 (33%) no clinical diagnosis of unilateral or bilateral radiographic hip OA
* 113 (23%) not meeting pain severity criteria
* 80 (16%) unwilling to undergo study interventions
* 68 (14%) hip pain not occurring on most days of last month
* 27 (5%) symptom duration <6 weeks
* 17 (3%) significant illness
* 17 (3%) receiving anticoagulants
* 12 (2%) previous surgery on affected hip
* 10 (2%) intra-articular corticosteroid injection into affected hip within preceding 3 months
* 9 clinical suspicion of local or systemic sepsis or infection
* 4 unable to understand and complete self-report questionnaires written in English
* 3 hypersensitivity to trial interventions
* 2 current or previous infection of affected hip
* 2 significant trauma to hip requiring immobilisation in the previous 3 months
* 1 pregnancy / lactation
* 1 contraindications to local anaesthetic

(Numbers do not tally to total since multiple reasons may be recorded)

Allocated to BCT only

(n= 67)~

Allocated to BCT+US- Triamcinolone-Lidocaine (n= 66)~

Allocated to BCT-US-Lidocaine (n= 66)~

Patient follow up$:

2 weeks (n= 62)

2 months (n= 59)

4 months (n= 57)

6 months (n= 56)

Primary analysis by ITT (n= 63\*), with 233 data points collected (87%)

Primary analysis by ITT (n= 66\*), with 248 data points collected (94%)

Primary analysis by ITT (n= 65\*), with 252 data points collected (95%)

Patient follow up$:

2 weeks (n= 65)

2 months (n= 66)

4 months (n= 61)

6 months (n= 61)

Patient follow up$:

2 weeks (n= 65)

2 months (n= 65)

4 months (n= 63)

6 months (n= 61)

Mailed (n= 3316)

Did not want to participate
(n= 88)#

Withdrawals$:

2 weeks (n= 0)

2 months (n= 1); unwilling to complete questionnaire

4 months (n= 0)

6 months (n= 2); hip replacement, no reason given

Withdrawals$:

2 weeks (n= 0)

2 months (n= 0)

4 months (n= 2); 2 deaths (one possibly related and one not related to the intervention)

6 months (n= 2); no reason given (n=2)

Withdrawals$:

2 weeks (n= 1); no reason given

2 months (n= 2); not happy with randomization, no reason

4 months (n= 4); no longer interested, recent fall, travel issues, no reason given

6 months (n= 2); no better, no longer interested

Eligible (n= 287)

BCT = Best Current Treatment; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only

# Reasons for declining (as listed): 28 wanted surgery/surgical opinion; 22 had a treatment preference (11 wanted corticosteroid injection; 3 did not want an injection; 8 did not say); 5 were not interested; 5 had too many other commitments; 3 due to having other co-morbidities; 3 had treatment plans in place; 1 due to caring for others; 1 was already taking part in research; 1 wanted to go back to work as soon as possible; 1 wanted to discuss options with GP.

~ Protocol violations related to treatment were noted for 8 participants: three for BCT; four for BCT-US-Lidocaine; one for BCT-US-Triamcinolone-Lidocaine (these were excluded from the per protocol sensitivity analysis).

$ There were 16 patient withdrawals: 9 for BCT; 4 for BCT-US-Triamcinolone-Lidocaine and 3 for BCT-US-Lidocaine. Mean pain score immediately prior to withdrawal was 3.4.

\* Follow up data available on at least one occasion. Out of the 741 total follow up responses there were 8 (1%) missing primary outcome data: 1 for BCT; 5 for BCT-US-Triamcinolone-Lidocaine and 2 for BCT-US-Lidocaine (hence 233, 248 and 252 primary outcome data were available for the three arms, respectively).

**Table 1: Baseline characteristics of trial participants.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ALL | BCT | BCT-US-Triamcinolone-Lidocaine | BCT-US-Lidocaine |
|  | n=199 | n=67 | n=66 | n=66 |
| Non-clinical characteristics |  |  |  |  |
| Age, mean (SD) | 62.8 (10.0) | 63.7 (10.9) | 62.5 (9.3) | 62.3 (9.8) |
| Females, n (%) | 113 (57%) | 42 (63%) | 35 (53%) | 36 (55%) |
| White ethnicity, n (%) | 198 (99%) | 67 (100%) | 66 (100%) | 65 (98%) |
| Living alone, n (%) | 32 (16%) | 10 (15%) | 9 (14%) | 13 (20%) |
| Currently in a paid job, n (%)\*3 Yes No, retired No | 88 (45%)82 (42%)26 (13%) | 25 (39%)30 (46%)10 (15%) | 37 (56%)23 (35%)6 (9%) | 26 (40%)29 (45%)10 (15%) |
| BMI (kg/m2), mean (SD) | 29.1 (5.8) | 29.6 (6.7) | 29.5 (5.6) | 28.4 (4.9) |
| Smoking status, n (%) Never Previously Currently | 97 (49%)69 (35%)33 (16%) | 33 (49%)24 (36%)10 (15%) | 35 (53%)21 (32%)10 (15%) | 29 (44%)24 (36%)13 (20%) |
| Alcohol intake, n (%) Daily / most days Once or twice week Once or twice month Once or twice year Never | 31 (16%)78 (39%)36 (18%)27 (14%)27 (14%) | 12 (18%)22 (33%)16 (24%)7 (10%)10 (15%) | 12 (18%)25 (38%)11 (17%)12 (18%)6 (9%) | 7 (11%)31 (47%)9 (14%)8 (12%)11 (17%) |
|  |  |  |  |  |
| Clinical characteristics |  |  |  |  |
| Hips affected, n (%) Both hips Right hip (only) Left hip (only) | 49 (25%)90 (45%)60 (30%) | 16 (24%)32 (48%)19 (28%) | 14 (21%)28 (42%)24 (36%) | 19 (29%)30 (46%)17 (26%) |
| Duration of symptoms, n (%)\*1 < 3 months 3-6 months 6-12 months > 1 year | 6 (3%)17 (9%)42 (21%)133 (67%) | 2 (3%)8 (12%)19 (28%)38 (57%) | 3 (5%)5 (8%)9 (14%)48 (74%) | 1 (2%)4 (6%)14 (21%)47 (71%) |
| Days of pain in last 12 months, n (%) < 7 days 1-4 weeks 1-3 months > 3 months | 1 (1%)0 (0%)12 (6%)186 (93%) | 0 (0%)0 (0%)4 (6%)63 (94%) | 0 (0%)0 (0%)6 (9%)60 (91%) | 1 (0%)0 (0%)2 (3%)63 (96%) |
| Previous injury, n (%) |  |  |  |  |
|  No | 172 (86%) | 59 (89%) | 58 (88%) | 55 (83%) |
|  Right hip only |  11 (6%) | 2 (3%) | 4 (6%) | 5 (8%) |
|  Left hip only | 10 (5%) | 2 (3%) | 3 (5%) | 5 (8%) |
|  Both hips | 5 (3%) | 3 (5%) | 1 (2%) | 1 (2%) |
| Sleep disturbance, n (%) No nights 1-2 nights Some nights Most nights Every night | 9 (5%)10 (5%)39 (20%)62 (31%)79 (40%) | 6 (9%)2 (3%)19 (28%)19 (28%)21 (31%) | 1 (2%)3 (5%)10 (15%)24 (36%)28 (42%) | 2 (3%)5 (8%)10 (15%)19 (29%)30 (46%) |
| Ever had steroid injection in hip(s), n (%) | 7 (4%) | 3 (4%) | 1 (2%) | 3 (5%) |
| Ever had steroid injection for other joint(s), n (%)\*1 | 67 (34%) | 19 (28%) | 25 (38%) | 23 (35%) |
| Preference for hip injection, n (%)\*3 | 185 (94%) | 62 (93%) | 62 (95%) | 61 (95%) |
| Received injection or not as per preference, n (%)\*3 | 128 (65%) | 5 (7%) | 62 (95%) | 61 (95%) |
| Presence of effusion, n (%)\*2 | - | - | 9 (14%) | 9 (14%) |
| Presence of synovitis, n (%)\*2 |  |  | 27 (42%) | 26 (40%) |
| Co-morbidity (other conditions), n (%)\*2 | 129 (65%) | 47 (70%) | 36 (55%) | 46 (71%) |
| Pain NRS score (0-10), mean (SD) median (IQR) | 5.7 (2.1)6 (4-8) | 5.7 (2.2)5 (4-8) | 5.8 (2.1)5 (4-8) | 5.7 (2.1)5 (4-8) |
| WOMAC – Total, mean (SD) | 50.7 (15.6) | 51.1 (19.0) | 50.2 (14.8) | 50.7 (13.0) |
|  WOMAC-P, mean (SD) | 10.7 (3.3) | 10.7 (4.0) | 10.7 (2.8) | 10.7 (3.2) |
|  WOMAC-S, mean (SD) | 4.5 (1.5) | 4.3 (1.5) | 4.6 (1.4) | 4.6 (1.5) |
|  WOMAC-F, mean (SD) | 35.5 (12.4) | 36.0 (14.6) | 35.0 (11.6) | 35.4 (10.9) |
| PSEQ, mean (SD) | 36.7 (13.7) | 35.7 (14.7) | 36.4 (13.4) | 38.5 (13.0) |
| IPQ, mean (SD) | 30.1 (6.6) | 30.7 (7.2) | 29.8 (7.3) | 29.9 (5.4) |
|  IPQ-Consequences | 6.5 (2.1) | 6.5 (2.4) | 6.4 (2.1) | 6.5 (1.8) |
|  IPQ-Timeline | 9.0 (1.5) | 9.0 (1.4) | 8.7 (1.8) | 9.2 (1.3) |
|  IPQ-Personal control | 4.0 (2.7) | 3.6 (2.8) | 4.2 (2.6) | 4.1 (2.9) |
|  IPQ-Treatment control | 7.4 (2.0) | 7.4 (2.0) | 7.3 (2.0) | 7.4 (2.0) |
|  IPQ-Emotional response | 5.9 (2.8) | 6.1 (2.9) | 6.1 (2.7) | 5.7 (2.8) |
| EQ5D, mean (SD) | 0.49 (0.23) | 0.50 (0.22) | 0.49 (0.23) | 0.48 (0.24) |
| SF12-PCS, mean (SD) | 33.9 (9.0) | 33.9 (9.1) | 34.5 (9.0) | 33.2 (8.9) |
| SF12-MCS, mean (SD) | 51.2 (12.0) | 49.3 (13.3) | 51.5 (12.2) | 52.9 (10.0) |
| GAD-7, mean (SD) | 5.8 (6.0) | 6.1 (6.3) | 5.9 (5.9) | 5.3 (5.8) |
| PHQ-8, mean (SD) | 6.6 (6.6) | 6.9 (6.2) | 6.7 (6.2) | 6.2 (6.0) |
| SPS, mean (SD) | 20.1 (4.9) | 20.0 (6.1) | 20.2 (4.7) | 20.2 (3.7) |
| Work performance, mean (SD) | 4.6 (2.8) | 3.9 (3.3) | 4.7 (2.4) | 5.2 (2.8) |
|  |  |  |  |  |
| Received in the past for hip problem, n (%) |  |  |  |  |
| Advice on weight loss | 45 (23%) | 17 (25%) | 17 (26%) | 11 (17%) |
| Written information about hip pain or OA | 66 (33%) | 26 (39%) | 28 (42%) | 12 (18%) |
| Advice on exercise | 90 (45%) | 26 (39%) | 35 (53%) | 29 (44%) |
| Referral to physiotherapy | 82 (41%) | 29 (43%) | 30 (46%) | 23 (35%) |
| Referral to rheumatology | 19 (10%) | 12 (18%) | 3 (5%) | 4 (6%) |
| Referral to orthopaedics | 13 (7%) | 4 (6%) | 3 (5%) | 6 (9%) |
| Referral to pain management | 15 (8%) | 6 (9%) | 3 (5%) | 6 (9%) |
| Painkillers on prescription | 125 (63%) | 38 (57%) | 45 (68%) | 42 (64%) |
| Walking aid | 29 (15%) | 10 (15%) | 10 (15%) | 9 (14%) |
| None of the above | 35 (18%) | 13 (19%) | 13 (20%) | 9 (14%) |
|  |  |  |  |  |
|  |  |  |  |

BCT = Best Current Treatment; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine.

Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC-Total) 0-96 [0=Minimum problems, 96=maximum problems]; WOMAC–Pain subscale (WOMAC-P) 0-20 [0=No pain, 20=Highest pain], WOMAC-Stiffness subscale (WOMAC-S) 0-8 [0=No stiffness, 8=Most stiffness], WOMAC-Function subscale (WOMAC-F) 0-68 [0=No difficulty, 68=Most difficulty]; Pain Self-Efficacy Questionnaire (PSEQ), 0-60 [0=No confidence; 60=Highest confidence]; modified brief Illness Perceptions Questionnaire (IPQ), 0-50 [0=Full understanding, 50=Least understanding]; IPQ-Consequences subscale (IPQ\_1) [0=No affect at all; 10=Severely affects life]; IPQ-Timeline subscale (IPQ\_2) [0=Last very short time; 10=Last forever]; IPQ-Personal control subscale (IPQ\_3) [0=No control; 10=Extreme control]; IPQ-Treatment control subscale (IPQ\_4) [0=Treatment no help; 10=Treatment extremely helpful]; IPQ-Emotional response subscale (IPQ\_5) [0=Not affected emotionally; 10=Extremely affected emotionally]; Short Form-12 Physical Component Scale (SF12\_PCS) 0-100 [0=Worst physical health, 100=Best physical health]; Short Form-12 Mental Component Scale (SF12\_MCS) 0-100 [0=Worst mental health, 100=best mental health]; EQ5D-5l (utility) -0.59 – 1.00 [-0.59=Worst health utility, 1.00=Best health utility]; Stanford Presenteeism Scale (SPS) 6-30 [6=Minimum ability, 30=Maximum ability]; Work Performance 0-10 NRS [0=Not affected, 10=Unable to do job]; Generalized Anxiety Disorder (GAD-7) 0-21 [0=no anxiety, 21=severe anxiety]; Patient Health Questionnaire depression scale (PHQ-8) 0-24 [0=no depression; 24=severe depression]

\* Missing data (to overall response): \*1 one missing \*2 two missing \*3 three missing

**Figure 2: Summary of pain NRS (primary outcome measure) by treatment arm**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ***BCT*** | ***BCT-US-Triamcinolone-Lidocaine*** | ***BCT-US-Lidocaine*** | ***BCT-US-Triamcinolone-Lidocaine v BCT*** | ***BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine*** |
|  |  |  |  |  |  |
|  | ***mean (SD), n*** | ***mean (SD), n*** | ***mean (SD), n*** | ***mean difference (95% CI)\* {SMD (95% CI)} [P value]*** | ***mean difference*** ***(95% CI)\* {SMD (95% CI)} [P value]*** |
|  |  |  |  |  |  |
| *2 weeks* | 6.0 (2.3), 62  | 3.0 (2.5), 63 | 4.0 (2.4), 63 | -3.17 (-4.06, -2.28) {-1.21 (-1.55, -0.81)} [P<0.001] | -1.02 (-1.90, -0.14) {-0.39 (-0.73, -0.05)} [P=0.023] |
| *2 months* | 5.8 (2.5), 58  | 4.2 (2.8), 64  | 4.7 (2.6), 65  | -1.81 (-2.71, -0.92) {-0.69 (-1.03, -0.35)}[P<0.001] | -0.67 (-1.54, 0.21) {-0.25 (-0.59, 0.08)} [P=0.136] |
| *4 months* | 5.4 (2.9), 57  | 4.5 (2.7), 59  | 5.0 (2.6), 63  | -0.86 (-1.78, 0.05){-0.33 (-0.68, 0.02)}[P=0.063] | -0.48 (-1.37, 0.41) {-0.18 (-0.52, 0.16)}[P=0.291] |
| *6 months* | 5.0 (2.8), 56  | 5.1 (2.7), 61  | 5.0 (2.5), 61  | 0.12 (-0.80, 1.04) {0.05 (-0.31, 0.40)}[P=0.797] | 0.10 (-0.79, 1.00) {0.04 (-0.30, 0.38)}[P=0.823] |
| *Overall (average)* | 5.6 (2.7), 63 | 4.2 (2.8), 66 | 4.7 (2.6), 65 | -1.43 (-2.15, -0.72)#1 {-0.55 (-0.82, -0.27)}[P<0.001] | -0.52 (-1.21, 0.18)#2 {-0.20 (-0.46, 0.07)}[P=0.148] |

BCT = Best Current Treatment; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; n (number of subjects analysed); SMD = Standardised Mean Difference (mean difference relative to the standard deviation of pain scores (derived as the mean of SDs across follow-up points)). \* Analysis by linear mixed model with 1st order autoregressive residual covariance and adjusted for age, gender and baseline pain score.
# Per protocol between-group differences: (1) -1.41 (-2.14, -0.67) [P<0.001]; (2) -0.54 (-1.26, 0.18) [P=0.139]

**Table 2: Summary of secondary health outcome measures by treatment arm.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **BCT** | **BCT-US-Triamcinolone-Lidocaine** | **BCT-US-Lidocaine** | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
|  |  |  |  |  |  |
|  | ***mean (SD), n*** | ***mean (SD), n*** | ***mean (SD), n*** |  |  |
| **WOMAC** |  |  |  |  |  |
| *2 months* | 50.3 (21.1), 55 | 34.2 (20.3), 61 | 41.4 (19.2), 62 | -14.8 (-20.9, -8.64)3  | -6.68 (-12.6, -0.76)1 |
| *4 months* | 43.6 (23.1), 51 | 38.3 (20.7), 59 | 43.9 (18.5), 56 | -6.38 (-12.5, -0.21)1 | -6.42 (-12.4, -0.45)1 |
| *6 months* | 42.9 (22.6), 53 | 41.8 (20.8), 55 | 44.0 (19.4), 59 | -1.42 (-7.68, 4.84) | -0.78 (-6.82, 5.27) |
| *Overall* | 45.7 (22.4), 60 | 38.0 (20.7), 64 | 43.0 (19.0), 65 | -7.52 (-13.00, -2.04)2 | -4.62 (-9.91, 0.67)  |
| - WOMAC-P | 9.6 (4.4) | 7.9 (4.3) | 9.0 (4.1) | -1.78 (-3.01, -0.54)2 | -1.07 (-2.26, 0.12)  |
| - WOMAC-S | 3.9 (1.9) | 3.5 (1.8) | 3.8 (1.8) | -0.53 (-1.08, 0.01) | -0.23 (-0.76, 0.30)  |
| - WOMAC-F | 32.1 (16.7) | 26.4 (15.1) | 30.4 (14.0) | -5.47 (-9.41, -1.53)2 | -3.60 (-7.40, 0.21)  |
|  |  |  |  |  |  |
| **PSEQ**  |  |  |  |  |  |
| *2 months* | 34.3 (15.9), 55 | 44.4 (14.2), 62 | 39.2 (13.6), 63 | 9.27 (5.10, 13.4)3  | 6.18 (2.15, 10.2)2 |
| *4 months* | 35.2 (16.7), 52 | 41.2 (15.0), 60 | 37.9 (13.2), 59 | 6.71 (2.51, 10.9)2 | 5.27 (1.21, 9.34)1 |
| *6 months* | 37.8 (14.7), 53 | 38.8 (15.1), 58 | 36.9 (12.8), 59 | 1.64 (-2.62, 5.90) | 2.88 (-1.24, 7.00) |
| *Overall* | 35.7 (15.7), 60 | 41.5 (14.9), 65 | 38.0 (13.2), 65 | 5.87 (2.30, 9.45)2 | 4.78 (1.32, 8.23)2  |
|  |  |  |  |  |  |
| **IPQ**  |  |  |  |  |  |
| *2 months* | 33.0 (9.23), 51 | 27.2 (10.6), 60 | 30.0 (8.64), 60 | -6.04 (-9.23, -2.84)3 | -2.55 (-5.59, 0.48) |
| *6 months* | 30.1 (9.16), 49 | 30.0 (9.03), 53 | 29.2 (9.49), 58 | -0.15 (-3.44, 3.14)2 | 0.79 (-2.33, 3.91) |
| *Overall* | 31.6 (9.27), 58 | 28.5 (9.94), 63 | 29.6 (9.04), 65 | -3.10 (-5.92, -0.27)1 | -0.88 (-3.57, 1.80) |
| - Consequences | 6.0 (2.6) | 5.5 (2.7) | 5.9 (2.3) | -0.55 (-1.27, 0.17) | -0.35 (-1.04, 0.35)  |
| - Timeline | 8.7 (2.1) | 8.7 (2.2) | 8.4 (2.2) | 0.07 (-0.74, 0.60) | 0.40 (-0.25, 1.05)  |
| - Personal control | 4.3 (2.7) | 4.5 (2.9) | 4.2 (2.7) | 0.12 (-0.93, 0.69) | 0.25 (-0.52, 1.03)  |
| - Treatment control | 3.9 (2.9) | 6.1 (3.2) | 5.0 (3.1) | 2.13 (1.11, 3.15)3 | 0.98 (0.01, 1.95)1 |
| - Emotional response | 5.2 (2.9) | 4.7 (3.1) | 4.8 (2.9) | -0.63 (-1.43, 0.16) | -0.43 (-1.19, 0.33)  |
|  |  |  |  |  |  |
| **SF-PCS**  |  |  |  |  |  |
| *2 months* | 32.8 (8.0), 55 | 39.1 (9.8), 59 | 35.0 (9.5), 60 | 5.30 (2.38, 8.21)3  | 4.05 (1.20, 6.89)1 |
| *4 months* | 35.7 (10.8), 53 | 39.0 (10.6), 58 | 33.7 (9.7), 53 | 3.07 (0.13, 6.01)1 | 5.31 (2.41, 8.21)3 |
| *6 months* | 33.7 (9.9), 50 | 37.7 (10.1), 51 | 34.0 (9.5), 54 | 3.04 (0.00, 6.08) | 2.15 (-0.81, 5.11) |
| *Overall* | 34.1 (9.6), 60 | 38.7 (10.1), 64 | 34.2 (9.6), 64 | 3.80 (1.33, 6.27)2 | 3.84 (1.43, 6.24)2  |
|  |  |  |  |  |  |
| **SF-MCS**  |  |  |  |  |  |
| *2 months* | 47.5 (12.9), 50 | 50.2 (12.0), 59 | 50.1 (12.3), 60 | 1.09 (-2.69, 4.87)  | -1.05 (-4.73, 2.63) |
| *4 months* | 46.3 (13.5), 53 | 49.4 (12.4), 58 | 49.9 (11.8), 53 | 2.01 (-1.80, 5.83) | 0.33 (-3.44, 4.10) |
| *6 months* | 49.8 (12.7), 50 | 48.7 (11.9), 51 | 49.2 (12.2), 54 | -2.63 (-6.61, 1.35) | -0.50 (-4.37, 3.37) |
| *Overall* | 47.8 (13.0), 60 | 49.5 (12.0), 64 | 49.8 (12.0), 64 | 0.16 (-2.83, 3.15)  | 0.29 (-2.60, 3.19) |
|  |  |  |  |  |  |
| **EQ5D-5L**  |  |  |  |  |  |
| *2 weeks* | 0.47 (0.27), 61 | 0.64 (0.23), 63 | 0.59 (0.22), 64 | 0.18 (0.12, 0.24)3  | 0.06 (0.00, 0.12) |
| *2 months* | 0.44 (0.29), 56 | 0.60 (0.26), 62 | 0.52 (0.24), 64 | 0.15 (0.08, 0.22)3  | 0.07 (0.00, 0.14)1 |
| *4 months* | 0.48 (0.28), 56 | 0.59 (0.23), 58 | 0.48 (0.28), 62 | 0.12 (0.04, 0.19)2  | 0.10 (0.03, 0.18)2 |
| *6 months* | 0.52 (0.25), 54 | 0.50 (0.25), 57 | 0.50 (0.24), 60 | 0.01 (-0.07, 0.08)  | 0.00 (-0.07, 0.08) |
| *Overall* | 0.48 (0.27), 63 | 0.58 (0.25), 66 | 0.52 (0.25), 65 | 0.11 (0.06, 0.17)3  | 0.06 (0.01, 0.11)1 |
|  |  |  |  |  |  |
| **SPS**  |  |  |  |  |  |
| *2 months* | 20.0 (6.0), 22 | 23.4 (4.4), 35 | 20.1 (6.0), 27 | 4.06 (1.75, 6.38)2  | 3.40 (1.22, 5.59)2 |
| *6 months* | 19.9 (6.6), 21 | 21.8 (5.1), 32 | 20.0 (4.7), 26 | 2.16 (-0.20, 4.53) | 2.45 (0.22, 4.69)1 |
| *Overall* | 19.9 (6.2), 43 | 22.7 (4.8), 67 | 20.1 (5.4), 53 | 3.11 (1.05, 5.18)1 | 2.93 (0.98, 4.88)1  |
| *Work performance* |  |  |  |  |  |
| *2 months* | 4.1 (3.0), 21 | 3.1 (2.4), 32 | 4.9 (3.0), 28 | -1.72 (-2.93, -0.51)1  | -1.49 (-2.64, -0.34)1 |
| *6 months* | 4.4 (3.2), 21 | 4.2 (2.7), 32 | 4.5 (2.7), 26 | -0.84 (-2.08, 0.39) | -0.47 (-1.64, 0.71) |
| *Overall* | 4.3 (3.1), 25 | 3.6 (2.6), 37 | 4.7 (2.8), 30 | -1.28 (-2.39, -0.18)1 | -0.98 (-2.03, 0.07)  |
|  |  |  |  |  |  |
| **BMI**  |  |  |  |  |  |
| *6 months* | 29.2 (6.1), 52 | 29.2 (5.4), 56 | 28.0 (4.7), 57 | -0.22 (-0.91, 0.46) | 0.10 (-0.55, 0.74) |
|  |  |  |  |  |  |
| **Perceived change**  | ***n (%)*** | ***n (%)*** | ***n (%)*** |  |  |
| *2 weeks* |  |  |  |  |  |
| ▪ completely better\* | 0 (0%) | 2 (3%) | 1 (2%) | RR=6.93 (3.39, 14.2)3$ | RR=2.28 (1.42, 3.66)3 |
| ▪ much better\* | 0 (0%) | 34 (53%) | 15 (23%) | RD=65% (26%, 100%)  | RD=31% (10%, 64%)  |
| ▪ somewhat better | 7 (11%) | 14 (22%) | 20 (31%) | NNT=2 [1, 4] | NNT=3 [2, 10] |
| ▪ same | 39 (63%) | 10 (16%) | 23 (36%) |  |  |
| ▪ somewhat worse | 10 (16%) | 4 (6%) | 4 (6%) |  |  |
| ▪ much worse | 6 (10%) | 0 (0%) | 1 (2%) |  |  |
| *2 months* |  |  |  |  |  |
| ▪ completely better\* | 1 (2%) | 2 (3%) | 0 (0%) | RR=6.66 (2.48, 17.9)3  | RR=2.63 (1.43, 4.82)2 |
| ▪ much better\* | 3 (5%) | 28 (42%) | 11 (17%) | RD=40% (10%, 100%) | RD=28% (7%, 65%)  |
| ▪ somewhat better | 6 (10%) | 9 (14%) | 21 (32%) | NNT=3 [1, 10] | NNT=4 [2, 14] |
| ▪ same | 27 (47%) | 14 (21%) | 19 (29%) |  |  |
| ▪ somewhat worse | 16 (28%) | 9 (14%) | 12 (19%) |  |  |
| ▪ much worse | 5 (9%) | 4 (6%) | 2 (3%) |  |  |
| *4 months* |  |  |  |  |  |
| ▪ completely better\* | 0 (0%) | 1 (2%) | 0 (0%) | RR=1.54 (0.32, 1.32) | RR=1.85 (0.88, 3.88) |
| ▪ much better\* | 10 (17%) | 15 (25%) | 9 (14%) | RD=9% (-12%, 5%)  | RD=12% (-2%, 40%)  |
| ▪ somewhat better | 5 (9%) | 15 (25%) | 10 (16%) | NNT=11 [20, -8] | NNT=8 [-50, 3] |
| ▪ same | 17 (30%) | 14 (23%) | 24 (38%) |  |  |
| ▪ somewhat worse | 16 (28%) | 13 (22%) | 14 (22%) |  |  |
| ▪ much worse | 9 (16%) | 2 (3%) | 6 (10%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ completely better\* | 2 (4%) | 1 (2%) | 0 (0%) | RR=0.91 (0.55, 2.17) | RR=1.27 (0.62, 2.58) |
| ▪ much better\* | 10 (18%) | 13 (21%) | 11 (18%) | RD=-2% (-10%, 26%)  | RD=5% (-7%, 28%)  |
| ▪ somewhat better | 7 (12%) | 13 (21%) | 12 (20%) | NNT=-50 [4, -10] | NNT=20 [4, -14] |
| ▪ same | 14 (25%) | `13 (21%) | 18 (29%) |  |  |
| ▪ somewhat worse | 14 (25%) | 18 (30%) | 15 (25%) |  |  |
| ▪ much worse | 9 (16%) | 3 (5%) | 5 (8%) |  |  |
|  |  |  |  |  |  |
| **Sleep problem**  |  |  |  |  |  |
| *2 months* |  |  |  |  |  |
| ▪ no nights\* | 4 (7%) | 12 (19%) | 7 (11%) | RR=1.96 (1.28, 3.03)2 | RR=1.72 (1.12, 2.63)1 |
| ▪ 1-2 nights\* | 5 (9%) | 16 (25%) | 5 (8%) | RD=45% (13%, 95%) | RD=36% (6%, 82%) |
| ▪ some nights\*  | 17 (31%) | 15 (24%) | 19 (31%) | NNT=2 [1, 8] | NNT=3 [1, 17] |
| ▪ most nights  | 15 (27%) | 12 (19%) | 17 (27%) |  |  |
| ▪ every night | 14 (25%) | 8 (13%) | 14 (23%) |  |  |
| *4 months* |  |  |  |  |  |
| ▪ no nights\* | 8 (15%) | 9 (15%) | 6 (10%) | RR=1.27 (0.79, 2.04) | RR=1.56 (1.06, 2.27)1 |
| ▪ 1-2 nights\* | 9 (17%) | 13 (22%) | 9 (15%) | RD=17% (-13%, 64%) | RD=25% (3%, 57%) |
| ▪ some nights\*  | 16 (30%) | 15 (25%) | 12 (20%) | NNT=6 [2, -7] | NNT=4 [2, 33] |
| ▪ most nights  | 13 (24%) | 14 (24%) | 25 (41%) |  |  |
| ▪ every night | 8 (15%) | 8 (14%) | 9 (15%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ no nights\* | 9 (17%) | 8 (14%) | 7 (12%) | RR=1.05 (0.69, 1.45) | RR=1.10 (0.79, 1.52) |
| ▪ 1-2 nights\* | 6 (12%) | 5 (9%) | 5 (8%) | RD=3% (-18%, 26%) | RD=5% (-10%, 24%) |
| ▪ some nights\*  | 15 (29%) | 14 (25%) | 16 (27%) | NNT=33 [4, -6] | NNT=20 [4, -10] |
| ▪ most nights  | 15 (29%) | 15 (26%) | 21 (35%) |  |  |
| ▪ every night | 7 (13%) | 15 (26%) | 11 (18%) |  |  |
|  |  |  |  |  |  |

BCT = Best Current Treatment; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only.

For numerical outcomes, effects shown are mean differences (summarised by mean scores (SD)). For dichotomised outcomes (dichotomy described below), the Relative Risk (RR) is shown. RD = Percent Risk Difference (derived as the product of the RR and observed positive proportion in the BCT arm (rounded to nearest integer and converted to percent) minus the observed positive percent in the BCT arm); NNT = Number Needed to Treat (=100/RD (rounded to nearest integer)). All effect sizes are presented with their associated 95% Confidence Interval.

Outcomes (numerical scales): Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC-T) 0-96 [0=Minimum problems, 96=maximum problems]; WOMAC–Pain subscale (WOMAC-P) 0-20 [0=No pain, 20=Highest pain], WOMAC-Stiffness subscale (WOMAC-S) 0-8 [0=No stiffness, 8=Most stiffness], WOMAC-Function subscale (WOMAC-F) 0-68 [0=No difficulty, 68=Most difficulty]; Pain Self-Efficacy Questionnaire (PSEQ), 0-60 [0=No confidence; 60=Highest confidence]; modified brief Illness Perceptions Questionnaire (IPQ), 0-50 [0=Full understanding, 50=Least understanding]; IPQ-Consequences subscale [0=No affect at all; 10=Severely affects life]; IPQ-Timeline subscale [0=Last very short time; 10=Last forever]; IPQ-Personal control subscale [0=No control; 10=Extreme control]; IPQ-Treatment control subscale [0=Treatment no help; 10=Treatment extremely helpful]; IPQ-Emotional response subscale [0=Not affected emotionally; 10=Extremely affected emotionally]; Short Form-12 Physical Component Scale (SF12-PCS) 0-100 [0=Worst physical health, 100=Best physical health]; Short Form-12 Mental Component Scale (SF12-MCS) 0-100 [0=Worst mental health, 100=best mental health]; EQ5D (utility) -0.59 – 1.00 [-0.59=Worst health utility, 1.00=Best health utility]; Stanford Presenteeism Scale (SPS) 6-30 [6=Minimum ability, 30=Maximum ability]; Work Performance 0-10 numerical integer scale [0=Not affected, 10=Unable to do job]; BMI=Body Mass Index (kg/m2).

# For comparative analysis of categorical variables (derivation of RR), \* is used as a marker of the categories that were used to define a ‘positive’ response coded as a 1 (the other categories denoting a ‘negative’ response coded 0) according to pre-agreed rules for dichotomisation of the categorical variables [$ indicates where RR was derived using completely/much/somewhat better as ‘positive response’ since the number of people who were completely or much better at 2 weeks in the BCT arm was zero and could not be analysed].

1 0.01≤P<0.05; 2 0.001≤P<0.01; 3 P<0.001 (analyses by linear or generalised mixed models accounting for repeated measures and adjusted for age, gender, baseline pain and (where applicable) the corresponding baseline value).

**Table 3: Satisfaction, understanding end expectations of care by treatment arm.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **BCT** | **BCT-US-Triamcinolone-Lidocaine** | **BCT-US-Lidocaine** | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
|  |  |  |  |  |  |
|  | ***mean (SD), n*** | ***mean (SD), n*** | ***mean (SD), n*** |  |  |
| **Rating of overall results of care**$  |  |  |  |  |  |
| *2 months* | 4.7 (3.3), 50 | 7.2 (2.6), 57 | 5.8 (3.3), 61 | 2.51 (1.40, 3.61)3  | 1.43 (0.38, 2.47)2 |
| *6 months* | 5.0 (2.9), 51 | 6.6 (2.8), 55 | 6.6 (2.7), 58 | 1.60 (0.50, 2.71)2  | 0.15 (-0.91, 1.21) |
|  |  |  |  |  |  |
| **Satisfaction with information received**  | ***n (%)*** | ***n (%)*** | ***n (%)*** |  |  |
| *2 months* |  |  |  |  |  |
| ▪ very satisfied\* | 15 (27%) | 35 (56%) | 28 (46%) | RR=1.35 (1.10, 1.64)2  | RR=1.15 (0.99, 1.34) |
| ▪ quite satisfied\* | 23 (41%) | 21 (34%) | 20 (33%) | RD=24% {7%, 44%}  | RD=12% {-1%, 27%}  |
| ▪ no opinion | 5 (9%) | 1 (2%) | 5 (8%) | NNT=5 [2, 15] | NNT=8 [4, -100] |
| ▪ not very satisfied | 6 (11%) | 3 (5%) | 7 (11%) |  |  |
| ▪ not at all satisfied | 7 (12%) | 2 (3%) | 1 (2%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ very satisfied\* | 12 (23%) | 23 (40%) | 29 (48%) | RR=1.19 (0.91, 1.56) | RR=1.15 (0.94, 1.40) |
| ▪ quite satisfied\* | 20 (39%) | 19 (33%) | 21 (35%) | RD=12% {-6%, 35} | RD=16% {-5%, 33%}  |
| ▪ no opinion | 8 (15%) | 8 (14%) | 6 (10%) | NNT=9 [3, -17] | NNT=6 [3, -20] |
| ▪ not very satisfied | 9 (17%) | `6 (10%) | 4 (7%) |  |  |
| ▪ not at all satisfied | 3 (6%) | 2 (3%) | 0 (0%) |  |  |
|  |  |  |  |  |  |
| **Understanding of hip problem**  |  |  |  |  |  |
| *2 months* |  |  |  |  |  |
| ▪ very clear\* | 19 (34%) | 25 (40%) | 29 (47%) | RR=1.01 (0.87, 1.17)  | RR=1.02 (0.89, 1.17)  |
| ▪ quite clear\* | 29 (52%) | 29 (47%) | 24 (39%) | RD=1% {-11%, 14%}  | RD=2% {-10%, 15%}  |
| ▪ no opinion | 2 (4%) | 1 (2%) | 5 (8%) | NNT=100 [8, -9] | NNT=50 [7, -10] |
| ▪ not very clear | 6 (11%) | 7 (11%) | 4 (6%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ very clear\* | 18 (35%) | 22 (38%) | 24 (40%) | RR=0.98 (0.81, 1.18)  | RR=0.88 (0.76, 1.03)  |
| ▪ quite clear\* | 24 (46%) | 24 (41%) | 30 (50%) | RD=-2% {-15%, 15%}  | RD=-11% {-22%, 3%}  |
| ▪ no opinion | 5 (10%) | 5 (9%) | 1 (2%) |  NNT=-50 [7, -7] | NNT=-9 [33, -5] |
| ▪ not very clear | 5 (10%) | 7 (12%) | 5 (8%) |  |  |
|  |  |  |  |  |  |
| **Patient still has questions about their hip problem**  |  |  |  |  |  |
| *2 months* |  |  |  | RR=1.19 (0.76, 1.82)  | RR=1.16 (0.76, 1.75)  |
| ▪ no\* | 30 (55%) | 37 (61%) | 33 (54%) | RD=10% {-13%, 45%}  | RD=9% {-13%, 41%}  |
| ▪ yes | 25 (45%) | 24 (39%) | 28 (46%) | NNT=10 [2, -8] | NNT=11 [2, -8] |
| *6 months* |  |  |  | RR=0.96 (0.65, 1.43)  | RR=1.14 (0.80, 1.61)  |
| ▪ no\* | 27 (52%) | 28 (49%) | 26 (43%) | RD=-2% {-18%, 22%}  | RD=6% {-9%, 26%}  |
| ▪ yes | 25 (48%) | 29 (51%) | 34 (57%) | NNT=-50 [5, -6] | NNT=17 [4, -11] |
|  |  |  |  |  |  |
| **Patient has been kept from their usual activities because of the hip pain**  |  |  |  |  |  |
| *2 months* |  |  |  |  |  |
| ▪ no\* | 25 (45%) | 40 (67%) | 32 (52%) | RR=1.79 (1.15, 2.70)2  | RR=1.41 (0.91, 2.22)  |
| ▪ yes | 31 (55%) | 20 (33%) | 30 (48%) | RD=36% {7%, 77%}  | RD=21% {-5%, 63%}  |
| If yes, how prepared patient feels about returning to normal activities and work |  |  |  | NNT=3 [1, 14] | NNT=5 [2, -20] |
| * very prepared
 | 1 | 9  | 1 |  |  |
| * quite prepared
 | 8 | 11 | 9 |  |  |
| * no opinion
 | 15 | 8 | 7 |  |  |
| * not very prepared
 | 10 | 10 | 14 |  |  |
| * not at all prepared
 | 4 | 2 | 4 |  |  |
| *6 months* |  |  |  |  |  |
| ▪ no\* | 25 (47%) | 27 (49%) | 28 (47%) | RR=1.15 (0.79, 1.69)  | RR=1.08 (0.76, 1.54)  |
| ▪ yes | 28 (53%) | 28 (51%) | 31 (53%) | RD=7% {-10%, 32%}  | RD=4% {-11%, 25%}  |
| * very prepared
 | 3 | 5 | 4 | NNT=14 [3, -10] | NNT=25 [4, -9] |
| * quite prepared
 | 8 | 6 | 11 |  |  |
| * no opinion
 | 17 | 10 | 12 |  |  |
| * not very prepared
 | 7 | 12 | 9 |  |  |
| * not at all prepared
 | 4 | 4 | 5 |  |  |
|  |  |  |  |  |  |
| **Satisfaction with care received** |  |  |  |  |  |
| *2 months* |  |  |  |  |  |
| ▪ very satisfied\* | 6 (12%) | 27 (47%) | 14 (23%) | RR=1.97 (1.33, 2.93)2  | RR=1.61 (1.17, 2.21)2 |
| ▪ quite satisfied\* | 13 (25%) | 14 (25%) | 14 (23%) | RD=36% {12%, 71%}  | RD=28% {8%, 56%}  |
| ▪ no opinion | 15 (29%) | 9 (16%) | 22 (36%) | NNT=3 [1, 8] | NNT=4 [2, 13] |
| ▪ not very satisfied | 10 (20%) | 5 (9%) | 7 (11%) |  |  |
| ▪ not at all satisfied | 7 (14%) | 2 (3%) | 5 (8%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ very satisfied\* | 6 (11%) | 15 (27%) | 17 (30%) | RR=1.72 (1.11, 2.66)1 | RR=0.93 (0.69, 1.25) |
| ▪ quite satisfied\* | 12 (23%) | 17 (31%) | 19 (33%) | RD=24% {4%, 56%}  | RD=-4% {-20%, 16%}  |
| ▪ no opinion | 20 (39%) | 12 (22%) | 15 (26%) | NNT=4 [2, 25] | NNT=-25 [6, -5] |
| ▪ not very satisfied | 10 (19%) | `7 (13%) | 6 (11%) |  |  |
| ▪ not at all satisfied | 4 (8%) | 4 (7%) | 0 (0%) |  |  |
|  |  |  |  |  |  |
| **Patient would have the same care again if they had the same condition**  |  |  |  |  |  |
| *2 months* |  |  |  |  |  |
| ▪ definitely\* | 4 (8%) | 26 (45%) | 16 (26%) | RR=2.41 (1.53, 3.80)3 | RR=1.45 (1.07, 1.96)1 |
| ▪ probably\* | 11 (22%) | 15 (26%) | 14 (23%) | RD=42% {16%, 84%} | RD=22% {3%, 47%} |
| ▪ no opinion | 16 (31%) | 11 (19%) | 14 (23%) | NNT=2 [1, 6] | NNT=5 [2, 33]  |
| ▪ probably not | 12 (23%) | 4 (7%) | 11 (18%) |  |  |
| ▪ definitely not | 8 (16%) | 2 (3%) | 6 (10%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ definitely\* | 6 (12%) | 18 (33%) | 17 (29%) | RR=1.89 (1.22, 2.92)2 | RR=1.06 (0.80, 1.40) |
| ▪ probably\* | 11 (22%) | `17 (31%) | 19 (33%) | RD=30% {7%, 65%} | RD=4% {-12%, 25%} |
| ▪ no opinion | 20 (41%) | 10 (19%) | 10 (17%) | NNT=3 [2, 14]  | NNT=25 [4, -8]  |
| ▪ probably not | 7 (14%) | 5 (9%) | 7 (12%) |  |  |
| ▪ definitely not | 5 (10%) | 4 (7%) | 5 (9%) |  |  |
|  |  |  |  |  |  |
| **Expectations for pain relief met**  |  |  |  |  |  |
| *2 months* |  |  |  |  |  |
| ▪ probably met\* | 15 (28%) | 32 (56%) | 22 (35%) | RR=1.52 (1.10, 2.10)1 | RR=1.26 (0.95, 1.67) |
| ▪ no opinion\* | 11 (21%) | 8 (14%) | 13 (21%) | RD=25% {5%, 54%} | RD=15% {-3%, 38%} |
| ▪ not met | 20 (38%) | 12 (21%) | 19 (31%) | NNT=4 [2, 20] | NNT=7 [3, -33] |
| ▪ definitely not met | 7 (13%) | 5 (9%) | 8 (13%) |  |  |
| *6 months* |  |  |  |  |  |
| ▪ probably met\* | 17 (33%) | `25 (44%) | 22 (37%) | RR=1.35 (0.99, 1.84) | RR=1.29 (0.95, 1.73) |
| ▪ no opinion\* | 10 (20%) | 13 (23%) | 9 (15%) | RD=19% {-1%, 45%} | RD=15% {-3%, 38%} |
| ▪ not met | 15 (29%) | 13 (23%) | 20 (34%) | NNT=5 [2, -100] | NNT=7 [3, -33] |
| ▪ definitely not met | 9 (18%) | 6 (10%) | 8 (14%) |  |  |
|  |  |  |  |  |  |
| **Perceived treatment allocation (injection type)**  |  |  |  |  |  |
| Unsure | - | 54 (86%) | 50 (81%) | - | - |
| *Guessed correctly* | - | 9 (14%) | 2 (3%) | - | - |
| *Guessed incorrectly* | - | 0 (0%) | 10 (16%) | - | - |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

BCT = Best Current Treatment; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine.

For numerical outcomes, effects shown are mean differences (summarised by mean scores (SD)). For dichotomised outcomes (dichotomy described below), the Relative Risk (RR) is shown. RD = Percent Risk Difference (derived as the product of the RR and observed positive proportion in the BCT arm (rounded to nearest integer and converted to percent) minus the observed positive percent in the BCT arm); NNT = Number Needed to Treat (=100/RD (rounded to nearest integer)). All effect sizes are presented with their associated 95% Confidence Interval.

# For comparative analysis of categorical variables (derivation of RR), \* is used as a marker of the categories that were used to define a ‘positive’ response coded as 1 (the other categories denoting a ‘negative’ response coded 0) according to pre-agreed rules for dichotomisation of the categorical variables.

$ Rating of overall results of care: 0-10 numerical integer scale [0=Terrible, 10=Excellent]

1 0.01≤P<0.05; 2 0.001≤P<0.01; 3 P<0.001 (analyses by linear or generalised mixed models accounting for repeated measures and adjusted for age, gender, baseline pain and (where applicable) the corresponding baseline value).

**Supplementary Table 1: Summary of adherence to the BCT advice and education about exercise.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **BCT** | **BCT-US-Triamcinolone-Lidocaine** | **BCT-US-Lidocaine** |
|  |  |  |  |
| Did read information leaflets given during clinic visit | 54/67 (81%) | 63/66 (95%) | 62/66 (94%) |
|  |  |  |  |
| Doing exercises as often as advised to |  |  |  |
|  2 months |  |  |  |
|  Strongly agree / Agree | 32 (62%) | 39 (64%) | 32 (53%) |
|  Not sure | 7 (13%) | 7 (12%) | 10 (17%) |
|  Strongly disagree / Disagree  | 13 (25%) | 15 (25%) | 18 (30%) |
|  4 months |  |  |  |
|  Strongly agree / Agree | 29 (57%) | 29 (49%) | 28 (48%) |
|  Not sure | 9 (18%) | 13 (22%) | 11 (19%) |
|  Strongly disagree / Disagree  | 13 (25%) | 17 (29%) | 19 (33%) |
|  6 months |  |  |  |
|  Strongly agree / Agree | 28 (54%) | 28 (49%) | 30 (50%) |
|  Not sure | 7 (13%) | 11 (19%) | 8 (13%) |
|  Strongly disagree / Disagree  | 17 (33%) | 18 (32%) | 22 (37%) |
|  |  |  |  |
| Number of times a week doing exercises |  |  |  |
|  2 months |  |  |  |
|  Never | 4 (8%) | 6 (10%) | 3 (5%) |
|  1 – 2 times | 15 (29%) | 20 (32%) | 23 (37%) |
|  3 – 4 times | 18 (35%) | 24 (39%) | 21 (34%) |
|  5 – 6 times | 5 (10%) | 3 (5%) | 3 (5%) |
|  Every day  | 10 (19%) | 9 (14%) | 12 (19%) |
|  4 months |  |  |  |
|  Never | 12 (24%) | 6 (10%) | 5 (8%) |
|  1 – 2 times | 13 (25%) | 23 (40%) | 23 (39%) |
|  3 – 4 times | 17 (33%) | 17 (29%) | 19 (32%) |
|  5 – 6 times | 4 (8%) | 5 (9%) | 4 (7%) |
|  Every day  | 5 (10%) | 7 (12%) | 8 (14%) |
|  6 months |  |  |  |
|  Never | 6 (11%) | 4 (7%) | 6 (10%) |
|  1 – 2 times | 17 (32%) | 32 (56%) | 25 (42%) |
|  3 – 4 times | 16 (30%) | 10 (18%) | 19 (32%) |
|  5 – 6 times | 9 (17%) | 4 (7%) | 2 (3%) |
|  Every day  | 5 (9%) | 7 (12%) | 7 (12%) |
|  |  |  |  |
| Duration (minutes) exercising |  |  |  |
|  2 months |  |  |  |
|  < 5 minutes | 2 (4%) | 4 (7%) | 5 (9%) |
|  5 – 9 minutes | 10 (20%) | 16 (29%) | 14 (24%) |
|  10 – 14 minutes | 17 (34%) | 17 (30%) | 22 (38%) |
|  15 – 29 minutes | 16 (32%) | 17 (30%) | 14 (24%) |
|  ≥ 30 minutes  | 5 (10%) | 2 (4%) | 3 (5%) |
|  4 months |  |  |  |
|  < 5 minutes | 3 (7%) | 6 (11%) | 3 (5%) |
|  5 – 9 minutes | 13 (31%) | 16 (30%) | 29 (52%) |
|  10 – 14 minutes | 14 (33%) | 16 (30%) | 11 (20%) |
|  15 – 29 minutes | 8 (19%) | 12 (22%) | 10 (18%) |
|  ≥ 30 minutes  | 4 (10%) | 4 (7%) | 3 (5%) |
|  6 months |  |  |  |
|  < 5 minutes | 0 (0%) | 3 (6%) | 5 (9%) |
|  5 – 9 minutes | 7 (17%) | 19 (35%) | 14 (26%) |
|  10 – 14 minutes | 17 (40%) | 14 (26%) | 21 (39%) |
|  15 – 29 minutes | 15 (36%) | 14 (26%) | 9 (17%) |
|  ≥ 30 minutes  | 3 (7%) | 4 (7%) | 5 (9%) |
|  |  |  |  |

**Supplementary Table 2: Relative risk, risk difference and number need to treat for dichotomised pain intensity NRS (pain score <5, ≥5)**

|  |  |  |
| --- | --- | --- |
|  | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
| *2 weeks* - RR (95% CI) | 2.73 (1.75, 4.26) [P<0.001]3 | 1.37 (1.03, 1.82) [P=0.028]1 |
|  - RD (95% CI) | 0.45 (0.19, 0.84) | 0.19 (0.02, 0.42) |
|  - NNT (95% CI) | 2.2 (1.2, 5.3) | 5.3 (2.4, 50) |
| *2 months* - RR (95% CI) | 1.75 (1.16, 2.63) [P=0.007]2 | 1.20 (0.87, 1.65) [P=0.279] |
|  - RD (95% CI) | 0.26 (0.06, 0.56) | 0.10 (-0.06, 0.32) |
|  - NNT (95% CI) | 3.8 (1.8, 17) | 10 (-17, 3.1) |
| *4 months* - RR (95% CI) | 1.63 (1.05, 2.52) [P=0.030]1 | 1.24 (0.85, 1.80) [P=0.258] |
|  - RD (95% CI) | 0.21 (0.02, 0.51) | 0.10 (-0.06, 0.34) |
|  - NNT (95% CI) | 4.8 (2.0, 50) | 10 (-17, 2.9) |
| *6 months* - RR (95% CI) | 0.99 (0.66, 1.50) [P=0.970] | 1.10 (0.72, 1.70) [P=0.658] |
|  - RD (95% CI) | 0.00 (-0.15, 0.21) | 0.04 (-0.11, 0.26) |
|  - NNT (95% CI) | ∞ (-6.7, 4.8) | 25 (-9.1, 3.8) |

BCT = Best Current Treatment; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; RR = Relative risk (RiskBCT-US-Triamcinolone-Lidocaine/RiskBCT); RD = Risk difference (RiskBCT-US-Triamcinolone-Lidocaine - RiskBCT); NNT = Number Needed to Treat (US-T versus BCT)

1 0.01<P<0.05; 2 0.001<P<0.01; 3 P<0.001 (analyses by generalized mixed model (with log link function) adjusted for age, gender and baseline pain score).

**Supplementary Table 3: Adjusted versus unadjusted analysis of primary and secondary outcomes**

|  |  |  |
| --- | --- | --- |
|  | ***Adjusted analysis*** | ***Unadjusted analysis*** |
|   | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
| **Primary outcome - Pain** |  |  |   |  |
| *2 weeks* | -3.17 (-4.06, -2.28)1  | -1.02 (-1.90, -0.14)3 | -3.08 (-3.99, -2.18)3 | -0.98 (-1.88, -0.07)1 |
| *2 months* | -1.81 (-2.71, -0.92)3 | -0.67 (-1.54, 0.21) | -1.72 (-2.62, -0.80)3 | -0.62 (-1.52, 0.27) |
| *4 months* | -0.86 (-1.78, 0.05) | -0.48 (-1.37, 0.41) | -0.77 (-1.70, 0.16) | -0.44 (-1.35, 0.47) |
| *6 months* | 0.12 (-0.80, 1.04) | 0.10 (-0.79, 1.00) | 0.22 (-0.72, 1.15) | 0.14 (-0.78, 1.06) |
| *Overall (average)* | -1.43 (-2.15, -0.72)1 | -0.52 (-1.21, 0.18) | -1.34 (-2.07, -0.61)3 | -0.47 (-1.20, 0.25) |
|  |  |  |   |  |
| **Secondary outcomes** |  |  |   |  |
| *WOMAC* |  |  |   |  |
| *2 months* | -14.8 (-20.9, -8.64)3  | -6.68 (-12.6, -0.76)1 | -15.73 (-23.20, -8.26)3 | -7.26 (-14.55, 0.04) |
| *4 months* | -6.38 (-12.5, -0.21)1 | -6.42 (-12.4, -0.45)1 | -7.22 (-14.76, 0.32) | -6.71 (-14.09, 0.66) |
| *6 months* | -1.42 (-7.68, 4.84) | -0.78 (-6.82, 5.27) | -2.40 (-9.95, 5.15) | -1.48 (-8.87, 5.90) |
| *Overall* | -7.52 (-13.00, -2.04)2 | -4.62 (-9.91, 0.67)  | -8.45 (-15.45, -1.45)1 | -5.15 (-12.01, 1.71) |
| *- WOMAC-P* | -1.78 (-3.01, -0.54)2 | -1.07 (-2.26, 0.12)  | -1.78 (-3.15, -0.41)1 | -1.02 (-2.36, 0.32) |
| *- WOMAC-S* | -0.53 (-1.08, 0.01) | -0.23 (-0.76, 0.30)  | -0.45 (-1.03, 0.14) | -0.24 (-0.81, 0.33) |
| *- WOMAC-F* | -5.47 (-9.41, -1.53)2 | -3.60 (-7.40, 0.21)  | -6.35 (-11.52, -1.18)1 | -3.97 (-9.03, 1.08) |
|  |  |  |   |  |
| **PSEQ** |  |  |   |  |
| *2 months* | 9.27 (5.10, 13.4)3  | 6.18 (2.15, 10.2)2 | 9.14 (3.90, 14.38)2 | 4.60 (-0.51, 9.71) |
| *4 months* | 6.71 (2.51, 10.9)2 | 5.27 (1.21, 9.34)1 | 6.66 (1.37, 11.95)1 | 3.81 (-1.35, 8.97) |
| *6 months* | 1.64 (-2.62, 5.90) | 2.88 (-1.24, 7.00) | 2.02 (-3.27, 7.32) | 1.85 (-3.04, 6.74) |
| *Overall* | 5.87 (2.30, 9.45)2 | 4.78 (1.32, 8.23)2  | 5.94 (1.13, 10.75)1 | 3.46 (-1.25, 8.16) |
|  |  |  |   |  |
| **IPQ** |  |  |   |  |
| *2 months* | -6.04 (-9.23, -2.84)3 | -2.55 (-5.59, 0.48) | -5.80 (-9.23, -2.27)2 | -2.48 (-5.78, 0.83) |
| *6 months* | -0.15 (-3.44, 3.14)2 | 0.79 (-2.33, 3.91) | -0.21 (-3.73, 3.31) | 0.64 (-2.75, 4.04) |
| *Overall* | -3.10 (-5.92, -0.27)1 | -0.88 (-3.57, 1.80) | -3.01 (-6.10, 0.09) | -0.92 (-3.91, 2.08) |
| *- Consequences* | -0.55 (-1.27, 0.17) | -0.35 (-1.04, 0.35)  | -0.48 (-1.28, 0.32) | -0.36 (-1.13, 0.42) |
| *- Timeline* | 0.07 (-0.74, 0.60) | 0.40 (-0.25, 1.05)  | 0.07 (-0.59, 0.73) | 0.30 (-0.34, 0.94) |
| *- Personal control* | 0.12 (-0.93, 0.69) | 0.25 (-0.52, 1.03)  | 0.22 (-0.63, 1.06) | 0.30 (-0.52, 1.11) |
| *- Treatment control* | 2.13 (1.11, 3.15)3 | 0.98 (0.01, 1.95)1 | 2.04 (1.05, 3.04)3 | 0.95 (-0.02, 1.91) |
| *- Emotional response* | -0.63 (-1.43, 0.16) | -0.43 (-1.19, 0.33)  | -0.58 (-1.53, 0.38) | -0.17 (-1.10, 0.76) |
|  |  |  |   |  |
| **SF-PCS** |  |  |   |  |
| *2 months* | 5.30 (2.38, 8.21)3  | 4.05 (1.20, 6.89)1 | 5.84 (2.33, 9.35)2 | 4.68 (1.23, 8.12)2 |
| *4 months* | 3.07 (0.13, 6.01)1 | 5.31 (2.41, 8.21)3 | 3.61 (-0.07, 7.14)1 | 5.91 (2.41, 9.41)2 |
| *6 months* | 3.04 (0.00, 6.08) | 2.15 (-0.81, 5.11) | 3.63 (0.02, 7.24)1 | 2.86 (-0.68, 6.40) |
| *Overall* | 3.80 (1.33, 6.27)2 | 3.84 (1.43, 6.24)2  | 4.36 (1.21, 7.51)2 | 4.48 (1.39, 7.58)2 |
|  |  |  |   |  |
| **SF-MCS** |  |  |   |  |
| *2 months* | 1.09 (-2.69, 4.87)  | -1.05 (-4.73, 2.63) | 2.42 (-2.09, 6.92) | 0.06 (-4.36, 4.48) |
| *4 months* | 2.01 (-1.80, 5.83) | 0.33 (-3.44, 4.10) | 3.44 (-1.10, 7.99) | -0.49 (-5.00, 4.03) |
| *6 months* | -2.63 (-6.61, 1.35) | -0.50 (-4.37, 3.37) | -0.68 (-5.34, 3.99) | -1.04 (-5.62, 3.55) |
| *Overall* | 0.16 (-2.83, 3.15)  | 0.29 (-2.60, 3.19) | 1.72 (-2.13, 5.59) | -0.49 (-4.29, 3.31) |
|  |  |  |   |  |
| **EQ-5D-5L** |  |  |   |  |
| *2 weeks* | 0.18 (0.12, 0.24)3  | 0.06 (0.00, 0.12) | 0.17 (0.08, 0.26)3 | 0.06 (-0.03, 0.15) |
| *2 months* | 0.15 (0.08, 0.22)3  | 0.07 (0.00, 0.14)1 | 0.14 (0.05, 0.23)2 | 0.07 (-0.02, 0.16) |
| *4 months* | 0.12 (0.04, 0.19)2  | 0.10 (0.03, 0.18)2 | 0.10 (0.01, 0.19)1 | 0.10 (0.01, 0.19)1 |
| *6 months* | 0.01 (-0.07, 0.08)  | 0.00 (-0.07, 0.08) | 0.01 (-0.10, 0.08) | 0.003 (-0.09, 0.09) |
| *Overall* | 0.11 (0.06, 0.17)3  | 0.06 (0.01, 0.11)1 | 0.10 (0.02, 0.18)1 | 0.06 (-0.02, 0.14) |
|  |  |  |   |  |
| **SPS** |  |  |   |  |
| *2 months* | 4.06 (1.75, 6.38)2  | 3.40 (1.22, 5.59)2 | 3.61 (0.80, 6.43)1 | 3.21 (0.54, 5.87)1 |
| *6 months* | 2.16 (-0.20, 4.53) | 2.45 (0.22, 4.69)1 | 1.76 (-1.10, 4.62) | 2.31 (-0.39, 5.01) |
| *Overall* | 3.11 (1.05, 5.18)1 | 2.93 (0.98, 4.88)1  | 2.69 (0.07, 5.30)1 | 2.76 (0.28, 5.24)1 |
|  |  |  |   |  |
| **Work performance** |  |  |   |  |
| *2 months* | -1.72 (-2.93, -0.51)1  | -1.49 (-2.64, -0.34)1 | -1.12 (-2.58, 0.35) | -1.83 (-3.19, -0.46)2 |
| *6 months* | -0.84 (-2.08, 0.39) | -0.47 (-1.64, 0.71) | -0.21 (-1.69, 1.27) | -0.70 (-2.09, 0.69) |
| *Overall* | -1.28 (-2.39, -0.18)1 | -0.98 (-2.03, 0.07)  | -0.66 (-2.04, 0.71) | -1.27 (-2.55, 0.02) |
|  |  |  |   |  |
| **BMI** |  |  |   |  |
| *6 months* | -0.22 (-0.91, 0.46) | 0.10 (-0.55, 0.74) | 0.62 (-1.86, 3.09) | -0.79 (-3.20, 1.63) |
|  |  |  |   |  |
| **Perceived change**✝ |  |  |  |  |
| *2 weeks* | 6.93 (3.39, 14.2)3$ | 2.28 (1.42, 3.66)3 | 6.92 (3.40, 14.10)3$ | 2.25 (1.40, 3.62)2 |
| *2 months* | 6.66 (2.48, 17.9)3 | 2.63 (1.43, 4.82)2 | 6.59 (2.46, 17.64)3 | 2.69 (1.147, 4.90)2 |
| *4 months* | 1.54 (0.32, 1.32) | 1.85 (0.88, 3.88) | 1.52 (0.75, 3.07) | 1.87 (0.89, 3.90) |
| *6 months* | 0.91 (0.55, 2.17) | 1.27 (0.62, 2.58) | 1.07 (0.54, 2.12) | 1.27 (0.63, 2.58) |
|  |  |  |   |  |
| **Sleep problem**✝ |  |  |   |  |
| *2 months* | 1.96 (1.28, 3.03)2 | 1.72 (1.12, 2.63)1 | 1.66 (1.07, 2.58)1 | 1.58 (1.01, 2.44)1 |
| *4 months* | 1.27 (0.79, 2.04) | 1.56 (1.06, 2.27)1 | 1.04 (0.65, 1.67) | 1.49 (1.00, 2.23)1 |
| *6 months* | 1.05 (0.69, 1.45) | 1.10 (0.79, 1.52) | 0.80 (0.54, 1.20) | 1.01 (0.72, 1.43) |
|  |  |  |   |  |
| **Rating of overall results of care** |  |   |  |
| *2 months* | 2.51 (1.40, 3.61)3  | 1.43 (0.38, 2.47)2 | 2.45 (1.36, 3.54)3 | 1.40 (0.35, 2.44)2 |
| *6 months* | 1.60 (0.50, 2.71)2  | 0.15 (-0.91, 1.21) | 1.54 (0.45, 2.63)2 | 0.11 (-0.95, 1.17) |
|  |  |  |   |  |
| **Satisfaction with information received**✝ |  |   |  |
| *2 months* | 1.35 (1.10, 1.64)2  | 1.15 (0.99, 1.34) | 1.33 (1.09, 1.62)2 | 1.15 (0.98, 1.34) |
| *6 months* | 1.19 (0.91, 1.56) | 1.15 (0.94, 1.40) | 1.18 (0.90, 1.54) | 0.87 (0.71, 1.06) |
|  |  |  |   |  |
| **Understanding of hip problem**✝ |  |   |  |
| *2 months* | 1.01 (0.87, 1.17)  | 1.02 (0.89, 1.17)  | 1.02 (0.89, 1.17) | 1.02 (0.89, 1.17) |
| *6 months* | 0.98 (0.81, 1.18)  | 0.88 (0.76, 1.03)  | 0.88 (0.75, 1.03) | 0.88 (0.75, 1.03) |
|  |  |  |   |  |
| **Patient still has questions about their hip problem**✝ |  |   |  |
| *2 months* | 1.19 (0.76, 1.82)  | 1.16 (0.76, 1.75)  | 1.16 (0.75, 1.77) | 1.17 (0.77, 1.77) |
| *6 months* | 0.96 (0.65, 1.43)  | 1.14 (0.80, 1.61)  | 0.95 (0.65, 1.38) | 1.11 (0.79, 1.56) |
|  |  |  |   |  |
| **Patient has been kept from their usual activities because of the hip pain**✝ |   |  |
| *2 months* | 1.79 (1.15, 2.70)2  | 1.41 (0.91, 2.22)  | 1.66 (1.08, 2.55)1 | 1.45 (0.66, 2.26) |
| *6 months* | 1.15 (0.79, 1.69)  | 1.08 (0.76, 1.54)  | 1.04 (0.72, 1.49) | 1.03 (0.71, 1.47) |
|  |  |  |   |  |
| **Satisfaction with care received**✝ |  |   |  |
| *2 months* | 1.97 (1.33, 2.93)2  | 1.61 (1.17, 2.21)2 | 1.93 (1.30, 2.86)2 | 1.59 (1.16, 2.19)2 |
| *6 months* | 1.72 (1.11, 2.66)1 | 0.93 (0.69, 1.25) | 1.68 (1.09, 2.60)1 | 1.14 (0.88, 1.47) |
|  |  |  |   |  |
| **Patient would have the same care again if they had the same condition**✝ |   |  |
| *2 months* | 2.41 (1.53, 3.80)3 | 1.45 (1.07, 1.96)1 | 2.40 (1.52, 3.80)3 | 1.44 (1.06, 1.95)1 |
| *6 months* | 1.89 (1.22, 2.92)2 | 1.06 (0.80, 1.40) | 1.87 (1.21, 2.88)2 | 1.04 (0.79, 1.38) |
|  |  |  |   |  |
| **Expectation for pain relief met**✝ |  |   |  |
| *2 months* | 1.52 (1.10, 2.10)1 | 1.26 (0.95, 1.67) | 1.43 (1.04, 1.98)1 | 1.24 (0.94, 1.64) |
| *6 months* | 1.35 (0.99, 1.84) | 1.29 (0.95, 1.73) | 1.26 (0.92, 1.73) | 1.27 (0.94, 1.72) |
| BCT = Best Current Treatment; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only.  |
| For numerical outcomes, effects shown are mean differences (summarised by mean scores (SD)). ✝ For binary/categorical outcomes, the Relative Risk (RR) is shown. All effect sizes are presented with their associated 95% Confidence Interval. Adjusted analysis completed by use of linear or generalised mixed models accounting for repeated measures and adjusted for age, gender, baseline pain and (where applicable) the corresponding baseline value. |
| Outcomes (numerical scales): Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC-T) 0-96 [0=Minimum problems, 96=maximum problems]; WOMAC–Pain subscale (WOMAC-P) 0-20 [0=No pain, 20=Highest pain], WOMAC-Stiffness subscale (WOMAC-S) 0-8 [0=No stiffness, 8=Most stiffness], WOMAC-Function subscale (WOMAC-F) 0-68 [0=No difficulty, 68=Most difficulty]; Pain Self-Efficacy Questionnaire (PSEQ), 0-60 [0=No confidence; 60=Highest confidence]; modified brief Illness Perceptions Questionnaire (IPQ), 0-50 [0=Full understanding, 50=Least understanding]; IPQ-Consequences subscale [0=No affect at all; 10=Severely affects life]; IPQ-Timeline subscale [0=Last very short time; 10=Last forever]; IPQ-Personal control subscale [0=No control; 10=Extreme control]; IPQ-Treatment control subscale [0=Treatment no help; 10=Treatment extremely helpful]; IPQ-Emotional response subscale [0=Not affected emotionally; 10=Extremely affected emotionally]; Short Form-12 Physical Component Scale (SF12-PCS) 0-100 [0=Worst physical health, 100=Best physical health]; Short Form-12 Mental Component Scale (SF12-MCS) 0-100 [0=Worst mental health, 100=best mental health]; EQ5D (utility) -0.59 – 1.00 [-0.59=Worst health utility, 1.00=Best health utility]; Stanford Presenteeism Scale (SPS) 6-30 [6=Minimum ability, 30=Maximum ability]; Work Performance 0-10 numerical integer scale [0=Not affected, 10=Unable to do job]; BMI=Body Mass Index (kg/m2); Rating of overall results of care: 0-10 numerical integer scale [0=Terrible, 10=Excellent]. |
| 1 0.01≤P<0.05; 2 0.001≤P<0.01; 3 P<0.001.$ indicates where RR was derived using completely/much/somewhat better as ‘positive response’ since the number of people who were completely or much better at 2 weeks in the BCT arm was zero and could not be analysed |

**Supplementary Table 4: Summary of WOMAC subscales (Pain, Stiffness and Function) subscales by treatment arm.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **BCT** | **BCT-US-Triamcinolone-Lidocaine** | **BCT-US-Lidocaine** | **BCT-US-Triamcinolone-Lidocaine v** **BCT alone** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
|  |  |  |  |  |  |
|  | ***mean (SD), n*** | ***mean (SD), n*** | ***mean (SD), n*** | ***mean difference\**** ***(95% CI) [P value]*** | ***mean difference\**** ***(95% CI) [P value]*** |
| **Pain** |  |  |  |  |  |
| *2 months* | 10.7 (3.8), 57 | 7.0 (4.3), 61 | 8.7 (4.1), 62 | -3.61 (-5.02, -2.20) [P<0.001] | -1.74 (-3.10, -0.37) [P=0.013] |
| *4 months* | 9.0 (4.6), 53 | 7.9 (4.3), 59 | 9.1 (4.1), 59 | -1.25 (-2.67, 0.18) [P=0.087] | -1.24 (-2.62, 0.14) [P=0.079] |
| *6 months* | 9.0 (4.5), 53 | 8.8 (4.3), 56 | 9.1 (4.1), 60 | -0.47 (-1.91, 0.97) [P=0.520] | -0.24 (-1.63, 1.15) [P=0.738] |
| *Overall* | 9.9 (4.2), 61 | 8.0 (4.0), 64 | 9.1 (3.7), 65 | -1.78 (-3.01, -0.54) [P=0.005] | -1.07 (-2.26, 0.12) [P=0.079] |
|  |  |  |  |  |  |
| **Stiffness** |  |  |  |  |  |
| *2 months* | 4.3 (1.9), 57 | 3.2 (1.9), 63 | 3.7 (1.7), 63 | -1.24 (-1.87, -0.62) [P<0.001] | -0.53 (-1.14, 0.08) [P=0.088] |
| *4 months* | 3.8 (1.9), 53 | 3.7 (1.9), 60 | 3.8 (1.8), 60 | -0.25 (-0.89, 0.39) [P=0.445] | -0.12 (-0.73, 0.50) [P=0.714] |
| *6 months* | 3.7 (1.9), 53 | 3.7 (1.7), 56 | 3.8 (1.8), 59 | -0.11 (-0.75, 0.54) [P=0.750] | -0.05 (-0.68, 0.57) [P=0.866] |
| *Overall* | 3.9 (1.9), 61 | 3.5 (1.8), 65 | 3.8 (1.8), 65 | -0.53 (-1.08, 0.01) [P=0.056] | -0.23 (-0.76, 0.30) [P=0.389] |
|  |  |  |  |  |  |
| **Function** |  |  |  |  |  |
| *2 months* | 35.3 (16.1), 55 | 23.8 (15.0), 62 | 29.1 (14.3), 63 | -10.4 (-14.8, 5.95) [P<0.001] | -4.94 (-9.19, -0.70) [P=0.022] |
| *4 months* | 30.7 (17.2), 51 | 26.7 (15.1), 60 | 31.3 (13.5), 59 | -4.81 (-9.23, -0.37) [P=0.034] | -4.89 (-9.16, -0.61) [P=0.025] |
| *6 months* | 30.2 (16.7), 53 | 28.8 (15.2), 57 | 31.0 (14.3), 59 | -1.25 (-5.74, 3.25) [P=0.587] | -0.96 (-5.30, 3.38) [P=0.666] |
| *Overall* | 32.1 (16.7), 60 | 26.4 (15.1), 65 | 30.4 (14.0), 65, | -5.47 (-9.41, -1.53) [P=0.007] | -3.60 (-7.40, 0.21) [P=0.064] |

BCT = Best Current Treatment; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; n (number of subjects analysed).

Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC-T) 0-96 [0=Minimum problems, 96=maximum problems]; WOMAC–Pain subscale (WOMAC-P) 0-20 [0=No pain, 20=Highest pain], WOMAC-Stiffness subscale (WOMAC-S) 0-8 [0=No stiffness, 8=Most stiffness], WOMAC-Function subscale (WOMAC-F) 0-68 [0=No difficulty, 68=Most difficulty].

\* Analysis by longitudinal linear mixed model adjusted for age, gender and baseline pain and WOMAC subscale scores.

**Supplementary Table 5: Summary of adverse events.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **BCT** | **BCT-US-Triamcinolone-Lidocaine** | **BCT-US-Lidocaine** |
|  |  |  |  |
| Total number of non-serious adverse events (related or unrelated) | 2 | 34 | 34 |
| No. of participants afflicted | 2 | 25 | 26 |
|  |  |  |  |
| *Expected related non-serious adverse events* |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  >Whitening of the skin\* | NA | 4 | 2 |
|  >Thinning of the skin\* | NA | 2 | 2 |
|  >Bruising\* | NA | 15 | 16 |
|  >Pain after injection | NA | 1 | 7 |
|  >Flushing | NA | 4 | 0 |
|  >Other skin problem eg rash | NA | 0 | 2 |
|  >Menorrhagia | NA | 1 | 0 |
|  >Infection | NA | 1 | 1 |
|  >Anxiety after injection | NA | 1 | 1 |
|  Discomfort with exercise | 2 | 0 | 0 |
| Total events | 2 | 29 | 31 |
| No. of participants afflicted\*\* | NA | 21 | 24 |
|  |  |  |  |
| *Non-related non-serious adverse events* |  |  |  |
|  >Constipation | 0 | 1 | 0 |
|  >Headache | 0 | 0 | 1 |
|  >Fall | 0 | 0 | 1 |
|  >Restless leg(s) | 0 | 1 | 0 |
|  >Plantar fascitis | 0 | 1 | 0 |
|  >Neuralgia | 0 | 0 | 1 |
|  >Cough | 0 | 1 | 0 |
|  >Numbness in leg | 0 | 1 | 0 |
| Total events | 0 | 5 | 3 |
| No. of participants afflicted | 0 | 4 | 3 |
|  |  |  |  |
| *Possibly related Serious adverse events* |  |  |  |
| Death due to subacute bacterial endocarditis | 0 | 1 | 0 |
|  |  |  |  |
| *Non-related Serious adverse events* |  |  |  |
| Death due to intracerebral haemorrhage following thrombectomy for acute thrombotic stroke | 0 | 1 | 0 |
| Hospitalisation due to myocardial infarction  | 0 | 1 | 0 |
| Incapacitating flare of pre-existing multiple sclerosis | 0 | 0 | 1 |
| Hospitalisation for colitis of diverticular origin | 1 | 0 | 0 |
| Hospitalisation for avascular necrosis of hip, and total hip replacement | 1 | 0 | 0 |
| Hospitalisation for elective percutaneous angioplasty | 0 | 0 | 1 |

BCT = Best Current Treatment; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; NA not applicable

\*Specific questions on 2-week and 2-month questionnaire. Recipients of injection were asked to complete a section on side effects and state if any other side effects from injection received.

\*\*For ‘No of participants afflicted’ in the above table, the estimates below for the CIs were extracted via the Wilson’s score method (with continuity correction):-

BCT-US-Triamcinolone-Lidocaine v BCT alone: Risk difference = 0.288 (0.153, 0.418) → NNH = 3.47 (2.39, 6.54)

BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine: Risk difference = -0.045 (-0.212, 0.124) → NNH = -22.2 (-4.72, 8.06)

**Supplementary Table 6: Sensitivity analysis of pain intensity NRS scores (through multiple imputation analysis).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sensitivity analysis number** | **Time-point** | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
|  |  |  |  |
|  |  | ***mean difference*** ***(95% CI) [P value]*** | ***mean difference*** ***(95% CI) [P value]*** |
|  |  |  |  |
| MI - 1 | *2 weeks* | -3.13 (-3.96, -2.31) [P<0.001] | -1.08 (-1.90, -0.27) [P=0.010] |
|  | *2 months* | -1.72 (-2.66, -0.79) [P<0.001] | -0.68 (-1.58, 0.22) [P=0.140] |
|  | *4 months* | -0.76 (-1.76, 0.25) [P=0.140] | -0.39 (-1.34, 0.55) [P=0.411] |
|  | *6 months* | 0.18 (-0.74, 1.11) [P=0.695] | 0.09 (-0.82, 0.99) [P=0.850] |
|  | *Overall* | -1.36 (-2.09, -0.62) [P<0.001] | -0.52 (-1.24, 0.20) [P=0.158] |
|  |  |  |  |
| MI - 2 | *2 weeks* | -3.18 (-4.00, -2.36) [P<0.001] | -1.10 (-1.91, -0.28) [P=0.009] |
|  | *2 months* | -1.83 (-2.76, -0.89) [P<0.001] | -0.66 (-1.56, 0.24) [P=0.148] |
|  | *4 months* | -0.80 (-1.82, 0.21) [P=0.120] | -0.33 (-1.29, 0.62) [P=0.490] |
|  | *6 months* | 0.09 (-0.84, 1.01) [P=0.854] | 0.09 (-0.82, 0.99) [P=0.854] |
|  | *Overall* | -1.43 (-2.17, -0.69) [P<0.001] | -0.50 (-1.22, 0.22) [P=0.172] |
|  |  |  |  |
| MI - 3 | *2 weeks* | -3.09 (-3.91, -2.27) [P<0.001] | -1.06 (-1.88, -0.25) [P=0.011] |
|  | *2 months* | -1.62 (-2.55, -0.68) [P=0.001] | -0.69 (-1.59, 0.22) [P=0.137] |
|  | *4 months* | -0.71 (-1.70, 0.29) [P=0.164] | -0.45 (-1.39, 0.49) [P=0.350] |
|  | *6 months* | 0.27 (-0.65, 1.20) [P=0.468] | 0.08 (-0.82, 0.99) [P=0.855] |
|  | *Overall* | -1.28 (-2.02, -0.55) [P=0.001] | -0.53 (-1.25, 0.19) [P=0.150] |
|  |  |  |  |
| MI - 4 | *2 weeks* | -3.24 (-4.07, -2.40) [P<0.001] | -1.11 (-1.94, -0.28) [P=0.009] |
|  | *2 months* | -1.95 (-2.89, -1.02) [P<0.001] | -0.64 (-1.54, 0.27) [P=0.166] |
|  | *4 months* | -0.87 (-1.90, 0.15) [P=0.093] | -0.26 (-1.23, 0.71) [P=0.599] |
|  | *6 months* | -0.06 (-1.00, 0.88) [P=0.900] | 0.08 (-1.00, 0.85) [P=0.873] |
|  | *Overall* | -1.53 (-2.28, -0.79) [P<0.001] | -0.48 (-1.22, 0.25) [P=0.195] |
|  |  |  |  |
| MI - 5 | *2 weeks* | -3.01 (-3.84, -2.18) [P<0.001] | -1.04 (-1.86, -0.22) [P=0.014] |
|  | *2 months* | -1.45 (-2.40, -0.51) [P=0.003] | -0.69 (-1.61, 0.23) [P=0.143] |
|  | *4 months* | -0.65 (-1.63, 0.34) [P=0.199] | -0.52 (-1.47, 0.42) [P=0.278] |
|  | *6 months* | 0.39 (-0.54, 1.33) [P=0.409] | 0.08 (-0.84, 1.01) [P=0.858] |
|  | *Overall* | -1.18 (-1.92, -0.44) [P=0.002] | -0.54 (-1.27, 0.19) [P=0.145] |

BCT = Best Current Treatment; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine

Sensitivity analysis number: Multiple Imputation (MI) via chained equations 1 MAR analysis; 2-5 NMAR analysis (2 MAR plus 1-point higher imputation, 3 MAR plus 1-point lower imputation, 4 MAR plus 2.5-points higher imputation, 5 MAR plus 2.5-points lower imputation). Analyses were by linear regression adjusted for age, gender and baseline pain score

**Supplementary Table 7: Evaluation of pre-specified exploratory subgroup analyses for the pain intensity score NRS measure.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Baseline** **variables** | **BCT** | **BCT-US-Triamcinolone-Lidocaine** | **BCT-US-Lidocaine** | **BCT-US-Triamcinolone-Lidocaine v BCT** | **BCT-US-Triamcinolone-Lidocaine v BCT-US-Lidocaine** |
|  |  |  |  |  |  |
|  | ***mean (SD)*** | ***mean (SD)*** | ***mean (SD)*** | ***mean difference (95% CI)*** | ***mean difference (95% CI)*** |
| Pain |  |  |  |  |  |
|  < 5 | 4.7 (2.5) | 3.9 (2.6) | 4.1 (2.3) | -0.84 | -0.21 |
|  ≥ 5 | 6.0 (2.7) | 4.3 (2.8) | 5.0 (2.6) | (-2.26, 0.59) | (-1.76, 1.38) |
|  |  |  |  |  |  |
| Duration |  |  |  |  |  |
|  < 6 months | 5.6 (3.4) | 4.2 (2.7) | 4.0 (3.4) | -0.34 | -0.85 |
|  ≥ 6 months | 5.6 (2.5) | 4.1 (2.7) | 4.7 (2.5) | (-2.43, 1.76) | (-3.49, 1.79) |
|  |  |  |  |  |  |
| IPQ |  |  |  |  |  |
|  < 30 | 4.6 (2.5) | 3.7 (2.7) | 4.2 (2.4) | -0.84 | -0.21 |
|  ≥ 30 | 6.5 (2.5) | 4.6 (2.8) | 5.1 (2.7) | (-2.26, 0.59) | (-1.63, 1.21) |
|  |  |  |  |  |  |
| BMI |  |  |  |  |  |
|  < 25 | 5.5 (2.8) | 3.3 (2.3) | 5.0 (2.2) | 0.54 | 1.35 |
|  ≥ 25 | 5.7 (2.6) | 4.3 (2.8) | 4.4 (2.6) | (-1.25, 2.34) | (-0.44, 3.13) |
|  |  |  |  |  |  |
| Received preferred treatment |  |  |  |  |  |
|  No | 5.7 (2.6) | 3.0 (1.9) | 3.6 (2.0) | 2.74 | -0.50 |
|  Yes | 3.7 (2.7) | 4.2 (2.8) | 4.9 (2.5) | (-0.35, 5.82) | (-3.87, 2.87) |
|  |  |  |  |  |  |
| Presence of obvious synovitis/ effusion\* |  |  |  |  |  |
|  No | - | 4.2 (3.0) | 4.0 (2.5) | - | -1.70 |
|  Yes | - | 4.2 (2.5) | 5.5 (2.4) |  | (-3.10, -0.30)† |
|  |  |  |  |  |  |

BCT = Best Current Treatment; BCT-US-Triamcinolone-Lidocaine = BCT plus Ultrasound guided injection of triamcinolone and lidocaine; BCT-US-Lidocaine = BCT plus Ultrasound guided injection of lidocaine only; IPQ = Illness Perceptions Questionnaire; BMI = Body Mass Index.

The between-group estimates are derived from the interaction term for treatment group x baseline variable and where the dependent variable is the numerical pain NRS at follow up and including the baseline covariates of age, gender and baseline pain score.

\* Injection subgroups only.

† P=0.017 (magnitude of between-group differences across time were: -0.8 at 2 weeks, -1.9 at 2 months, -1.9 at 4 months, -1.9 at 6 months)