Clinical trial results:
The clinical and cost effectiveness of a steroid injection versus a night splint for Carpal Tunnel Syndrome: a pragmatic randomised trial in primary care (INSTinCTS)

Summary

EudraCT number	2013-001435-48
Trial protocol	GB
Global end of trial date	26 February 2019

Results information

Result version number	v1 (current)
This version publication date	13 March 2020
First version publication date	13 March 2020

Trial information

Trial identification

Sponsor protocol code	464/11

Additional study identifiers

ISRCTN number	ISRCTN09392969
ClinicalTrials.gov id (NCT number)	-
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Keele University
Sponsor organisation address	Keele, Newcastle-under-Lyme, United Kingdom, ST5 5BG
Public contact	Clinical Studies Co-ordinator, Keele Primary Care Musculoskeletal Trials Unit (Keele CTU), 0044 01782 733909, e.skinner@keele.ac.uk
Scientific contact	Clinical Studies Co-ordinator, Keele Primary Care Musculoskeletal Trials Unit (Keele CTU), 0044 01782 733909, e.skinner@keele.ac.uk

Notes:

Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	20 February 2020
Is this the analysis of the primary completion data?	Yes
Primary completion date	26 February 2019
Global end of trial reached?	Yes
Global end of trial date	26 February 2019
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

The primary objective of this trial is to investigate whether a steroid injection is clinically effective in reducing symptoms and improving function in the short term (6 weeks) compared to a night splint in people consulting with mild to moderate carpal tunnel syndrome in primary care.

Protection of trial subjects:

The trial was performed in accordance with the recommendations guiding physicians in biomedical research involving human subjects adopted by the 18th World Medical Assembly, Helsinki, Finland, 1964, amended at the 52nd World Medical Association General Assembly, Edinburgh, Scotland. Informed written consent was obtained from the participants prior to any trial-specific procedures taking place. The right of a participant to refuse participation without giving reasons was respected. The trial was submitted to and approved by a main NHS Research Ethics Committee (main REC) and the appropriate site approvals given for each participating centre prior to entering participants into the trial. Subsequent amendments were approved by the Health Research Authority (HRA), main REC and MHRA as required. All information collected during the course of the trial is kept strictly confidential. Keele CTU complied with all aspects of the applicable Data Protection Act.

Background therapy:

None

Evidence for comparator:

The most frequently reported and readily available treatments for carpal tunnel syndrome in primary care are splinting, anti-inflammatory medication and local corticosteroid injection. Systematic reviews (including Cochrane reviews) of nonsurgical conservative treatments have assessed local corticosteroid injections, oral steroid medication and splinting. Both night splinting and steroid injection lead to greater improvement in symptoms in the short-term over no treatment or placebo injection although evidence of longer benefit was unclear. Review authors concluded that many of the trials included in these reviews had a high risk of bias and more robust trials are needed to compare treatments and ascertain the duration of benefit. A direct comparison between the effects of steroid injection and splinting has been made in two small trials, neither of which were carried out in a primary care setting where most people with carpal tunnel syndrome are managed.

Actual start date of recruitment	17 April 2014
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	United Kingdom: 234
Worldwide total number of subjects	234
EEA total number of subjects	234

Notes:

Subjects enrolled per age group	
In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	174
From 65 to 84 years	56
85 years and over	4

Subject disposition

Recruitment

Recruitment details:

Patients were recruited from 25 General Practices and community musculoskeletal clinics between 17/04/2014 and 31/12/2016

Pre-assignment

Screening details:

Patients with a positive CTS diagnosis were assessed for eligibility by the GP/clinician based on the inclusion/exclusion criteria. Patients who were interested in trial participation were then seen by appropriate member of the clinical team who explained the trial in full, and were asked to provide written informed consent.

Pre-assignment period milestones

Number of subjects started	234
Number of subjects completed	234

Period 1

Period 1 title	Trial recruitment and follow up (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Single blind
Roles blinded	Data analyst[1]

Blinding implementation details:

Participants and clinicians were not blind to the allocation of treatment arm. The research nurses who conducted minimal data collection and statisticians were blind to allocation. Analysis of the primary outcome was conducted blind to arm allocation.

Arms

Are arms mutually exclusive?	Yes
Arm title	Steroid injection

Arm description:

One injection of 20mg methylprednisolone acetate to inflitrate the carpal tunnel

Arm type	Active comparator
Investigational medicinal product name	Methylprednisolone acetate
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Periarticular use

Dosage and administration details:

One injection of 20mg methylprednisolone acetate (as 20mg of depo-medrone from 40mg/mL) via a disposable needle (23G or 25G) and syringe which was inserted at the wrist between the proximal and distal wrist crease to infiltrate the carpal tunnel.

Arm title	Splint

Arm description:

Participants received a beta wrist brace which immobilised the wrist in a neutral or slightly extended position intended to reduce pressure within the carpal tunnel, to wear at night for 6 weeks.

Arm type	Wrist splint

No investigational medicinal product assigned in this arm

Notes:

[1] - The roles blinded appear inconsistent with a simple blinded trial.

Justification: Analysis was performed blind to treatment allocation. Data collection was self-reported but a blind assessor collected data from questionnaire non-responders.

Number of subjects in period 1	Steroid injection	Splint
Started	116	118
Baseline	113	117
6 weeks follow-up	108	109
6 months follow-up	96	97
12 months follow-up	87	88
24 months follow-up	78	81
Completed	78	81
Not completed	38	37
Consent withdrawn by subject	7	9
Lost to follow-up	31	28

Baseline characteristics

Reporting groups	
Reporting group title	Steroid injection
Reporting group description:	
One injection of 20mg methylprednisolone acetate to inflitrate the carpal tunnel	
Reporting group title	Splint
Reporting group description:	
Participants received a beta wrist brace which immobilised the wrist in a neutral or slightly extended position intended to reduce pressure within the carpal tunnel, to wear at night for 6 weeks.	

Reporting group values	Steroid injection	Splint	Total
Number of subjects	116	118	234
Age categorical			
Units: Subjects			
In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	0	0	0
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	85	89	174
From 65-84 years	28	28	56
85 years and over	3	1	4
Age continuous			
Units: years			
arithmetic mean	52.6	52.2	
standard deviation	± 17.0	± 14.9	-
Gender categorical			
Units: Subjects			
Female	73	81	154
Male	43	37	80
First time diagnosed with CTS			
CTS: Carpal Tunnel Syndrome			
Units: Subjects			
Yes	97	102	199
No	16	15	31
Missing	3	1	4
Number of times previously had CTS			
CTS: Carpal Tunnel Syndrome			
Units: Subjects			
N/A	97	102	199
One	11	8	19
Two	1	1	2
Three	0	0	0
More than three	3	4	7
Missing	4	3	7
Hand or wrist previously affected by			

CTS			
CTS: Carpal Tunnel Syndrome			
Units: Subjects			
N/A	97	102	199
Right	6	3	9
Left	1	2	3
Both	8	9	17
Missing	4	2	6
Steroid injection into a joint other than wrist if previously had CTS			
CTS: Carpal Tunnel Syndrome			
Units: Subjects			
N/A	97	102	199
Yes	9	9	18
No	7	6	13
Missing	3	1	4
Usefulness of injection into other joint if previously had CTS			
CTS: Carpal Tunnel Syndrome			
Units: Subjects			
N/A	104	108	212
Of great help	7	7	14
Of some help	1	1	2
Of little help	0	0	0
Of no help	1	1	2
Missing	3	1	4
Which problematic hand or wrist Units: Subjects			
Right	36	37	73
Left	19	20	39
Both	57	59	116
Missing	4	2	6
If both hands problematic, which hand was worse Units: Subjects			
N/A	55	57	112
Right	25	24	49
Left	13	19	32
No difference	7	3	10
Missing	16	15	31
Dominant hand Units: Subjects			
Right	99	99	198
Left	12	16	28
Missing	5	3	8
Duration of hand or wrist problems Units: Subjects			
<3 months	19	17	36
3-6 months	37	33	70
6 months-1 year	22	27	49
>1 year	34	39	73
Missing	4	2	6

How did hand or wrist problems start Units: Subjects			
Suddenly	33	17	50
Gradually	79	99	178
Missing	4	2	6
Particular position causes hand or wrist problems Units: Subjects			
Yes	50	62	112
No	62	54	116
Missing	4	2	6
Currently taking pain relief Units: Subjects			
Yes	36	34	70
No	77	83	160
Missing	3	1	4
Number of times a day taking pain relief Units: Subjects			
N/A	77	83	160
One	7	8	15
Two	13	5	18
Three	5	5	10
Four	3	5	8
Five	0	1	1
Missing	11	11	22
Number of days per week taking pain relief Units: Subjects			
N/A	77	83	160
One	0	0	0
Two	1	4	5
Three	3	0	3
Four	1	0	1
Five	2	2	4
Six	0	0	0
Seven	14	7	21
Missing	18	22	40
Number of weeks in a month taking pain relief Units: Subjects			
N/A	77	83	160
One	1	0	1
Two	2	1	3
Three	1	0	1
Four	17	9	26
Missing	18	25	43
In a current paid job Units: Subjects			
Yes	58	74	132
No	55	42	97
Missing	3	2	5
Typical weekly working hours			

Units: Subjects			
N/A	55	42	97
Full time	39	47	86
Part time	18	27	45
Missing	4	2	6
Describes current situation in respect of your job Units: Subjects			
N/A	55	42	97
Doing my usual job	50	62	112
On paid annual leave/holiday	2	1	3
Working fewer hours	1	2	3
Doing lighter duties	1	6	7
On paid sick leave	3	3	6
On unpaid sick leave	0	0	0
Missing	4	2	6
If not doing usual job/annual leave, is this due to hand or wrist problems Units: Subjects			
N/A	105	105	210
Yes	2	4	6
No	3	6	9
Missing	6	3	9
Taken time off work during the last 6 months for your hand or wrist problem Units: Subjects			
N/A	55	42	97
Yes	8	5	13
No	49	69	118
Missing	4	2	6
I feel my welfare is important to my employer Units: Subjects			
N/A	104	111	215
Strongly disagree	0	0	0
Disagree	0	0	0
Agree	4	3	7
Strongly agree	4	2	6
Missing	4	2	6
Which treatment would you prefer Units: Subjects			
Strongly prefer wrist injection	13	13	26
Somewhat prefer wrist injection	11	21	32
No preference	65	60	125
Somewhat prefer night splints	12	8	20
Strongly prefer night splints	6	10	16
Missing	9	6	15
If you received wrist injection would you expect your symptoms to improve Units: Subjects			
Yes	69	70	139
No	0	2	2
Not sure	39	41	80

Missing	8	5	13
If you received night splint would you expect your symptoms to improve Units: Subjects			
Yes	46	40	86
No	3	4	7
Not sure	58	69	127
Missing	9	5	14
My hand or wrist problem will last for a long time Units: Subjects			
Strongly disagree	3	3	6
Disagree	7	8	15
Neither agree nor disagree	45	51	96
Agree	44	42	86
Strongly agree	14	12	26
Missing	3	2	5
My hand or wrist problem has major consequences on my life Units: Subjects			
Strongly disagree	4	10	14
Disagree	19	22	41
Neither agree nor disagree	26	30	56
Agree	41	37	78
Strongly agree	23	17	40
Missing	3	2	5
There is a lot that I can do to control my hand or wrist problems Units: Subjects			
Strongly disagree	12	9	21
Disagree	21	31	52
Neither agree nor disagree	48	42	90
Agree	30	32	62
Strongly agree	2	2	4
Missing	3	2	5
What I can do determines whether my hand or wrist problem gets better or worse Units: Subjects			
Strongly disagree	4	4	8
Disagree	11	14	25
Neither agree nor disagree	40	32	72
Agree	49	57	106
Strongly agree	9	9	18
Missing	3	2	5
Treatment can control my hand or wrist problem Units: Subjects			
Strongly disagree	0	0	0
Disagree	3	0	3
Neither agree nor disagree	20	35	55
Agree	74	71	145
Strongly agree	16	9	25
Missing	3	3	6

My hand or wrist problem affects me emotionally Units: Subjects			
Strongly disagree	10	18	28
Disagree	17	19	36
Neither agree nor disagree	17	21	38
Agree	40	45	85
Strongly agree	29	13	42
Missing	3	2	5
Been bothered by feeling down, depressed or hopeless Units: Subjects			
Yes	47	39	86
No	66	78	144
Missing	3	1	4
Been bothered by little interest or pleasure in doing things Units: Subjects			
Yes	39	33	72
No	74	83	157
Missing	3	2	5
Diagnosed with hypothyroidism Units: Subjects			
Yes	5	9	14
No	108	107	215
Missing	3	2	5
Diagnosed with diabetes Units: Subjects			
Yes	13	8	21
No	99	109	208
Missing	4	1	5
Any other conditions affecting neck, shoulders or elbows Units: Subjects			
Yes	45	28	73
No	68	88	156
Missing	3	2	5
Had pain anywhere else Units: Subjects			
Yes	74	72	146
No	39	45	84
Missing	3	1	4
Last time you were free of pain Units: Subjects			
<3 months ago	22	20	42
3-6 months ago	13	19	32
6 months-1 year	9	23	32
1-3 years ago	38	23	61
>3 years ago	31	32	63
Missing	3	1	4
On average how often do you drink alcohol Units: Subjects			

Daily or most days	11	11	22
Once or twice a week	38	45	83
Once or twice a month	25	22	47
One or twice a year	16	18	34
Never	23	21	44
Missing	3	1	4
What is your current smoking status Units: Subjects			
Never smoked	55	55	110
Previously smoked	39	48	87
Current smoker	19	13	32
Missing	3	2	5
Insomnia due to hand or wrist problems			
Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia. Based on multiply imputed data			
Units: Subjects			
No	46	58	104
Yes	70	60	130
Treatment for previous CTS: steroid injection Units: Subjects			
Not applicable	97	102	199
No	16	12	28
Yes	3	4	7
Treatment for previous CTS: Wrist splint Units: Subjects			
Not applicable	97	102	199
No	12	12	24
Yes	7	4	11
Treatment for previous CTS: carpal tunnel decompression Units: Subjects			
Not applicable	97	102	199
No	16	14	30
Yes	3	2	5
Treatment for previous CTS: ultrasound Units: Subjects			
Not applicable	97	102	199
No	18	15	33
Yes	1	1	2
Treatment for previous CTS: exercises Units: Subjects			
Not applicable	97	102	199
No	19	16	35
Yes	0	0	0
Treatment for previous CTS: vitamin supplements Units: Subjects			
Not applicable	97	102	199
No	19	15	34
Yes	0	1	1
Treatment for previous CTS: changes in			

workplace Units: Subjects			
Not applicable	97	102	199
No	19	16	35
Yes	0	0	0
Treatment for previous CTS: other Units: Subjects			
Not applicable	97	102	199
No	18	16	34
Yes	1	0	1
Treatment for previous CTS: none Units: Subjects			
Not applicable	97	102	199
No	14	8	22
Yes	5	8	13
If not in a current paid job, describe current position: retired Units: Subjects			
Not applicable	58	74	132
No	20	15	35
Yes	38	29	67
If not in a current paid job, describe current position: student Units: Subjects			
Not applicable	58	74	132
No	55	43	98
Yes	3	1	4
If not in a current paid job, describe current position: looking after children/home Units: Subjects			
Not applicable	58	74	132
No	46	35	81
Yes	12	9	21
If not in a current paid job, describe current position: unemployed Units: Subjects			
Not applicable	58	74	132
No	55	37	92
Yes	3	7	10
If not in a current paid job, describe current position: voluntary worker Units: Subjects			
Not applicable	58	74	132
No	56	44	100
Yes	2	0	2
To what extent have hand or wrist problems affected your performance at work over the past month			
0-10 scale; 0=not at all, 10=unable to do job			
Units: 0-10 scale			
arithmetic mean	3.8	4.2	
standard deviation	± 3.0	± 2.9	-
Body mass index			

Units: kg/m2			
arithmetic mean	30.2	30.5	
standard deviation	± 7.6	± 7.5	-
BCTQ symptom severity and functional limitations			
Higher scores indicate more symptom severity and functional limitations. Based on multiply imputed data. BCTQ: Boston carpal tunnel questionnaire.			
Units: 1-5			
arithmetic mean	2.69	2.65	
standard deviation	± 0.70	± 0.62	-
BCTQ symptom severity subscale			
Higher scores indicate more severe symptoms. Based on multiply imputed data. BCTQ: Boston carpal tunnel questionnaire.			
Units: 1-5			
arithmetic mean	2.96	2.91	
standard deviation	± 0.66	± 0.61	-
BCTQ functional limitations subscale			
Higher scores indicate more severe functional impairment. Based on multiply imputed data. BCTQ: Boston carpal tunnel questionnaire.			
Units: 1-5			
arithmetic mean	2.32	2.28	
standard deviation	± 0.92	± 0.84	-
Hand-wrist pain intensity			
Higher scores indicate more pain			
Units: 0-10			
arithmetic mean	6.33	6.12	
standard deviation	± 2.05	± 2.21	-

End points

End points reporting groups

Reporting group title	Steroid injection
Reporting group description:	
One injection of 20mg methylprednisolone acetate to inflitrate the carpal tunnel	
Reporting group title	Splint
Reporting group description:	
Participants received a beta wrist brace which immobilised the wrist in a neutral or slightly extended position intended to reduce pressure within the carpal tunnel, to wear at night for 6 weeks.	

Primary: BCTQ symptom severity and functional limitations 6 weeks

End point title	BCTQ symptom severity and functional limitations 6 weeks
End point description:	
Comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment). BCTQ: Boston Carpal Tunnel Questionnaire	
End point type	Primary
End point timeframe:	
6 weeks	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 1-5				
arithmetic mean (standard deviation)	2.02 (± 0.81)	2.29 (± 0.75)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 weeks
Statistical analysis description:	
Multiple imputation for missing data was performed at 6 weeks. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.32

Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.48
upper limit	-0.16

Secondary: BCTQ symptom severity subscale 6 weeks

End point title	BCTQ symptom severity subscale 6 weeks

End point description:

Comparison of BCTQ symptom severity between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms).
BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 1-5				
arithmetic mean (standard deviation)	2.12 (± 0.84)	2.43 (± 0.76)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 weeks

Statistical analysis description:

Multiple imputation for missing data was performed at 6 weeks. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.35
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.53
upper limit	-0.17

Secondary: BCTQ functional limitations subscale 6 weeks

End point title	BCTQ functional limitations subscale 6 weeks

End point description:

Comparison of BCTQ functional limitations between treatment groups at 6 weeks follow-up (higher score indicates more severe functional impairment).
BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 1-5				
arithmetic mean (standard deviation)	1.88 (± 0.88)	2.09 (± 0.86)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 weeks

Statistical analysis description:

Multiple imputation for missing data was performed at 6 weeks. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.003
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.26
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.43
upper limit	-0.09

Secondary: Hand-wrist pain intensity 6 weeks

End point title	Hand-wrist pain intensity 6 weeks

End point description:

Comparison of pain scores between treatment groups at 6 weeks follow-up (higher score indicates more pain).

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-10				
arithmetic mean (standard deviation)	3.42 (± 2.77)	4.28 (± 2.73)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 weeks

Statistical analysis description:

Multiple imputation for missing data was performed at 6 weeks. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.005
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.97
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.64
upper limit	-0.3

Secondary: Insomnia due to hand-wrist problems 6 weeks

End point title	Insomnia due to hand-wrist problems 6 weeks

End point description:

Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia.

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	83	73		
Yes	33	45		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 weeks

Statistical analysis description:

Multiple imputation for missing data was performed at 6 weeks. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.018
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	0.44
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.22
upper limit	0.87

Secondary: Referral to surgery at 6 weeks

End point title	Referral to surgery at 6 weeks

End point description:

Participants were asked if they were referred for surgery (carpal tunnel decompression) in the last 6 weeks.

Multiple imputation for missing data was planned at 6 weeks. Comparison of outcome between treatment arms planned to adjust for sex, age, and duration of symptoms. Logistic regression was not performed due to small number of `yes' counts

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	112	113		
Yes	4	5		

Statistical analyses

No statistical analyses for this end point

Secondary: Surgery 6 weeks

End point title	Surgery 6 weeks

End point description:

Participants were asked if they had surgery for carpal tunnel syndrome in the last 6 weeks.

Multiple imputation for missing data was planned at 6 weeks. Comparison of outcome between treatment arms planned to adjust for sex, age, and duration of symptoms. Logistic regression was not performed due to small number of `yes' counts.

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	114	116		
Yes	2	2		

Statistical analyses

No statistical analyses for this end point

Secondary: BCTQ symptom severity and functional limitations 6 months

End point title	BCTQ symptom severity and functional limitations 6 months

End point description:

Comparison of overall BCTQ between treatment groups at 6 months follow-up (higher score indicates more severe symptoms and functional impairment).
BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 1-5				
arithmetic mean (standard deviation)	2.15 (± 0.79)	2.06 (± 0.73)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months
Statistical analysis description:	
Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.5
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.06
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.11
upper limit	0.23

Secondary: BCTQ symptom severity subscale 6 months

End point title	BCTQ symptom severity subscale 6 months
End point description:	
Comparison of BCTQ symptom severity between treatment groups at 6 months follow-up (higher score indicates more severe symptoms). BCTQ: Boston Carpal Tunnel Questionnaire	
End point type	Secondary
End point timeframe:	
6 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 1-5				
arithmetic mean (standard deviation)	2.33 (± 0.86)	2.18 (± 0.75)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.21
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.13
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.07
upper limit	0.33

Secondary: BCTQ functional limitations subscale 6 months

End point title	BCTQ functional limitations subscale 6 months

End point description:

Comparison of BCTQ functional limitations between treatment groups at 6 months follow-up (higher score indicates more functional impairment).
BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 1-5				
arithmetic mean (standard deviation)	1.91 (± 0.84)	1.89 (± 0.84)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months
Statistical analysis description:	
Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.96
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.005
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.175
upper limit	0.166

Secondary: Hand-wrist pain intensity 6 months

End point title	Hand-wrist pain intensity 6 months
End point description:	
Comparison of pain scores between treatment groups at 6 months follow-up (higher score indicates more pain).	
End point type	Secondary
End point timeframe:	
6 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-10				
arithmetic mean (standard deviation)	4.32 (± 3.26)	3.46 (± 3.01)		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.055
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.79
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.02
upper limit	1.59

Secondary: Insomnia due to hand-wrist problems 6 months

End point title	Insomnia due to hand-wrist problems 6 months

End point description:

Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	79	86		
Yes	37	32		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.76
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.12
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.55
upper limit	2.2

Secondary: Referral to surgery 6 months

End point title	Referral to surgery 6 months

End point description:

Participants were asked if they were referred for surgery (carpal tunnel decompression) in the last 6 months.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	94	104		
Yes	22	14		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.23
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.66

Confidence interval	
level	95 %
sides	2-sided
lower limit	0.73
upper limit	3.77

Secondary: Surgery 6 months

End point title	Surgery 6 months

End point description:

Participants were asked if they had surgery for carpal tunnel syndrome in the last 6 months.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	99	105		
Yes	17	13		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between the treatment groups were adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.66
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.28
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.41
upper limit	3.98

Secondary: Herbal remedies and vitamin use 6 months

End point title	Herbal remedies and vitamin use 6 months

End point description:

Participants were asked if they had bought herbal remedies or vitamins to help with hand or wrist problems in the last 6 months

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	109	111		
Yes	7	7		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.66
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.43
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.28
upper limit	7.34

Secondary: Over the counter pain medication 6 months

End point title	Over the counter pain medication 6 months

End point description:

Participants were asked if they bought over the counter paracetamol, ibuprofen or co-codamol to help with hand or wrist problems in the last 6 months.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	82	88		
Yes	34	30		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.4
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.42
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.63
upper limit	3.18

Secondary: Prescribed pain medication 6 months

End point title	Prescribed pain medication 6 months

End point description:

Participants were asked if they were prescribed tablet medication (paracetamol, ibuprofen, naproxen, diclofenac, codeine, tramadol, co-codomal, tramacet, co-proxamol, dihydrocodeine, other) for hand or wrist problem in the last 6 months.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 2 categories				
No	96	106		
Yes	20	12		

Statistical analyses

Statistical analysis title	Multiple imputation at 6 months

Statistical analysis description:

Multiple imputation for missing data was performed at 6 months. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.2
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.99
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.7
upper limit	5.66

Secondary: BCTQ symptom severity and functional limitations over 24 months: 6 weeks

End point title	BCTQ symptom severity and functional limitations over 24 months: 6 weeks

End point description:

Comparison of overall BCTQ between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more severe symptoms and functional impairment). Results are presented at 6 weeks. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	95	102		
Units: 1-5				
arithmetic mean (standard deviation)	1.95 (± 0.82)	2.30 (± 0.77)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	197
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.001
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	-0.34
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.53
upper limit	-0.14

Secondary: BCTQ symptom severity and functional limitations over 24 months: 6 months

End point title	BCTQ symptom severity and functional limitations over 24 months: 6 months

End point description:

Comparison of overall BCTQ between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more severe symptoms and functional impairment). Results are presented at 6 months. BCTQ: Boston Carpal Tunnel Questionnaire.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	83	92		
Units: 1-5				
arithmetic mean (standard deviation)	2.08 (± 0.79)	2.04 (± 0.72)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Splint v Steroid injection
Number of subjects included in analysis	175
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.74
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	0.03
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.17
upper limit	0.24

Secondary: BCTQ symptom severity and functional limitations over 24 months: 12 months

End point title	BCTQ symptom severity and functional limitations over 24 months: 12 months

End point description:

Comparison of overall BCTQ between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more severe symptoms and functional impairment). Results are presented at 12 months. BCTQ: Boston Carpal Tunnel Questionnaire.

End point type	Secondary

End point timeframe:

12 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	78	78		
Units: 1-5				
arithmetic mean (standard deviation)	1.98 (± 0.88)	2.05 (± 0.80)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	156
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.41
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	-0.09
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.3
upper limit	0.12

Secondary: BCTQ symptom severity and functional limitations over 24 months: 24 months

End point title	BCTQ symptom severity and functional limitations over 24 months: 24 months

End point description:

Comparison of overall BCTQ between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more severe symptoms and functional impairment). Results are presented at 24 months. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

24 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	70	73		
Units: 1-5				
arithmetic mean (standard deviation)	1.79 (± 0.79)	1.73 (± 0.76)		

Statistical analyses

Statistical analysis title	Available case analysis
Statistical analysis description:	
Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	143
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.58
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	0.06
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.16
upper limit	0.28

Secondary: Hand-wrist pain intensity over 24 months: 6 weeks

End point title	Hand-wrist pain intensity over 24 months: 6 weeks
End point description:	
Comparison of pain scores between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more pain). Results are presented at 6 weeks.	
End point type	Secondary
End point timeframe:	
6 weeks	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	105	106		
Units: 0-10				
arithmetic mean (standard deviation)	3.33 (± 2.67)	4.28 (± 2.62)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	211
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.009
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	-0.98
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.72
upper limit	-0.24

Secondary: Hand-wrist pain intensity over 24 months: 6 months

End point title	Hand-wrist pain intensity over 24 months: 6 months

End point description:

Comparison of pain scores between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more pain). Results are presented at 6 months.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	92	94		
Units: 0-10				
arithmetic mean (standard deviation)	4.11 (± 3.01)	3.29 (± 2.74)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	186
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.058
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	0.76
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.02
upper limit	1.54

Secondary: Hand-wrist pain intensity over 24 months: 12 months

End point title	Hand-wrist pain intensity over 24 months: 12 months

End point description:

Comparison of pain scores between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more pain). Results are presented at 12 months.

End point type	Secondary

End point timeframe:

12 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	83	85		
Units: 0-10				
arithmetic mean (standard deviation)	3.17 (± 2.93)	3.14 (± 2.74)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	168
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.95
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	0.03
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.79
upper limit	0.85

Secondary: Hand-wrist pain intensity over 24 months: 24 months

End point title	Hand-wrist pain intensity over 24 months: 24 months

End point description:

Comparison of pain scores between treatment groups across all time points (6 weeks, 6-, 12-, and 24 month follow-up) (higher score indicates more pain). Results were presented at 24 months.

End point type	Secondary

End point timeframe:

24 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	75	77		
Units: 0-10				
arithmetic mean (standard deviation)	2.81 (± 3.19)	2.40 (± 2.83)		

Statistical analyses

Statistical analysis title	Available case analysis

Statistical analysis description:

Available case analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms. An interaction term was fitted between treatment and follow-up time point to estimate treatment effect at each time point.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	152
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.35
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	0.41

Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.45
upper limit	1.26

Secondary: BCTQ symptom severity and functional limitations 6 weeks (CC)

End point title	BCTQ symptom severity and functional limitations 6 weeks (CC)

End point description:

Sensitivity analysis for comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	95	102		
Units: 1-5				
arithmetic mean (standard deviation)	1.95 (± 0.82)	2.29 (± 0.77)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 weeks

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	197
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.36
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.54
upper limit	-0.19

Secondary: BCTQ symptom severity subscale 6 weeks (CC)

End point title	BCTQ symptom severity subscale 6 weeks (CC)

End point description:

Sensitivity analysis for comparison of BCTQ symptom severity between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	104	104		
Units: 1-5				
arithmetic mean (standard deviation)	2.07 (± 0.83)	2.44 (± 0.78)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 weeks

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	208
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.4
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.59
upper limit	-0.21

Secondary: BCTQ functional limitations subscale 6 weeks (CC)

End point title	BCTQ functional limitations subscale 6 weeks (CC)

End point description:

Sensitivity analysis for comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more functional impairment) on participants with complete data. BCTQ: Boston

Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	96	105		
Units: 1-5				
arithmetic mean (standard deviation)	1.86 (± 0.91)	2.10 (± 0.86)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 weeks

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	201
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.005
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.26
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.44
upper limit	-0.08

Secondary: Hand-wrist pain intensity 6 weeks (CC)

End point title	Hand-wrist pain intensity 6 weeks (CC)

End point description:

Sensitivity analysis for comparison of pain scores between treatment groups at 6 weeks follow-up (higher score indicates more pain) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	105	106		
Units: 0-10				
arithmetic mean (standard deviation)	3.33 (± 2.67)	4.28 (± 2.62)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 weeks

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	211
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.002
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-1.05
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.72
upper limit	-0.38

Secondary: Insomnia due to hand-wrist problems 6 weeks (CC)

End point title	Insomnia due to hand-wrist problems 6 weeks (CC)

End point description:

Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia. Sensitivity analysis for comparison of the odds of insomnia between treatment groups at 6 weeks follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	97	96		
Units: 2 categories				
No	75	62		
Yes	22	34		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 weeks

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	193
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.006
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	0.35
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.17
upper limit	0.74

Secondary: BCTQ symptom severity and functional limitations 6 months (CC)

End point title	BCTQ symptom severity and functional limitations 6 months (CC)

End point description:

Sensitivity analysis for comparison of overall BCTQ between treatment groups at 6 months follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	83	92		
Units: 1-5				
arithmetic mean (standard deviation)	2.08 (± 0.79)	2.04 (± 0.72)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Splint v Steroid injection
Number of subjects included in analysis	175
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.58
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.05
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.13
upper limit	0.24

Secondary: BCTQ symptom severity 6 months (CC)

End point title	BCTQ symptom severity 6 months (CC)

End point description:

Sensitivity analysis for comparison of BCTQ symptom severity between treatment groups at 6 months follow-up (higher score indicates more severe symptoms) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	88	94		
Units: 1-5				
arithmetic mean (standard deviation)	2.29 (± 0.87)	2.16 (± 0.74)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	182
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.25
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.13
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.09
upper limit	0.35

Secondary: BCTQ functional limitations subscale 6 months (CC)

End point title	BCTQ functional limitations subscale 6 months (CC)

End point description:

Sensitivity analysis for comparison of BCTQ function limitations between treatment groups at 6 months follow-up (higher score indicates more functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	85	93		
Units: 1-5				
arithmetic mean (standard deviation)	1.85 (± 0.84)	1.88 (± 0.82)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	178
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.93
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.01

Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.17
upper limit	0.18

Secondary: Hand-wrist pain intensity 6 months (CC)

End point title	Hand-wrist pain intensity 6 months (CC)

End point description:

Sensitivity analysis for comparison of pain scores between treatment groups at 6 months follow-up (higher score indicates more pain) on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	92	94		
Units: 1-5				
arithmetic mean (standard deviation)	4.11 (± 3.01)	3.29 (± 2.74)		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	186
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.052
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.8
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.01
upper limit	1.61

Secondary: Insomnia due to hand-wrist problems 6 months (CC)

End point title	Insomnia due to hand-wrist problems 6 months (CC)

End point description:

Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia. Sensitivity analysis for comparison of the odds of insomnia between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	80	86		
Units: 2 categories				
No	60	68		
Yes	20	18		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	166
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.53
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.29
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.58
upper limit	2.88

Secondary: Referral to surgery 6 months (CC)

End point title	Referral to surgery 6 months (CC)

End point description:

Participants were asked if they were referred for surgery (carpal tunnel decompression) in the last 6 months. Sensitivity analysis for comparison of the odds of insomnia between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	96	93		
Units: 2 categories				
No	80	82		
Yes	16	11		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	189
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.41
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.43
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.61
upper limit	3.34

Secondary: Herbal remedies and vitamin use 6 months (CC)

End point title	Herbal remedies and vitamin use 6 months (CC)

End point description:

Participants were asked if they had bought herbal remedies or vitamins to help with hand or wrist problems in the last 6 months. Sensitivity analysis for comparison of the odds of herbal remedies and vitamin use between treatment groups at 6 months follow-up on participants with complete data.

Complete case analysis as a sensitivity analysis was planned. Comparison of outcome between treatment arms planned to adjust for sex, age, and duration of symptoms. Logistic regression was not performed due to small number of `yes' counts.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	80	83		
Units: 2 categories				
No	78	81		
Yes	2	2		

Statistical analyses

No statistical analyses for this end point

Secondary: Over the counter pain medication 6 months (CC)

End point title	Over the counter pain medication 6 months (CC)

End point description:

Participants were asked if they bought over the counter paracetamol, ibuprofen or co-codamol to help with hand or wrist problems in the last 6 months. Sensitivity analysis for comparison of the odds of medication use between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	80	83		
Units: 2 categories				
No	64	66		
Yes	16	17		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	163
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.52
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.32
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.57
upper limit	3.06

Secondary: Prescribed pain medication 6 months (CC)

End point title	Prescribed pain medication 6 months (CC)

End point description:

Participants were asked if they were prescribed tablet medication (paracetamol, ibuprofen, naproxen, diclofenac, codeine, tramadol, co-codomal, tramacet, co-proxamol, dihydrocodeine, other) for hand or wrist problem in the last 6 months. Sensitivity analysis for comparison of the odds of pain medication use between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	82	86		
Units: 2 categories				
No	70	79		
Yes	12	7		

Statistical analyses

Statistical analysis title	Complete case analysis at 6 months

Statistical analysis description:

Complete case analysis as a sensitivity analysis was performed. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	168
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.18
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	2.05
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.72
upper limit	5.78

Secondary: BCTQ symptom severity and functional limitations 6 weeks (PR)

End point title	BCTQ symptom severity and functional limitations 6 weeks (PR)

End point description:

Per protocol analysis for comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	94	85		
Units: 1-5				
arithmetic mean (standard deviation)	1.96 (± 0.84)	2.28 (± 0.72)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 weeks

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Splint v Steroid injection
Number of subjects included in analysis	179
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.36

Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.55
upper limit	-0.18

Secondary: BCTQ symptom severity 6 weeks (PR)

End point title	BCTQ symptom severity 6 weeks (PR)

End point description:

Per protocol analysis for comparison of BCTQ symptom severity between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	102	86		
Units: 1-5				
arithmetic mean (standard deviation)	2.07 (± 0.83)	2.44 (± 0.74)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 weeks

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	188
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.39
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.59
upper limit	-0.19

Secondary: BCTQ functional limitations subscale 6 weeks (PR)

End point title	BCTQ functional limitations subscale 6 weeks (PR)

End point description:

Per protocol analysis for comparison of BCTQ functional limitations between treatment groups at 6 weeks follow-up (higher score indicates more functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	95	87		
Units: 1-5				
arithmetic mean (standard deviation)	1.88 (± 0.94)	2.06 (± 0.80)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 weeks

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	182
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.003
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.28
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.46
upper limit	-0.09

Secondary: Hand-wrist pain intensity 6 weeks (PR)

End point title	Hand-wrist pain intensity 6 weeks (PR)

End point description:

Per protocol analysis for comparison of pain scores between treatment groups at 6 weeks follow-up (higher score indicates more pain) on participants with complete data.

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	103	87		
Units: 1-5				
arithmetic mean (standard deviation)	3.33 (± 2.67)	4.44 (± 2.50)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 weeks

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	190
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.001
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-1.16
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.85
upper limit	-0.48

Secondary: Insomnia due to hand-wrist problems 6 weeks (PR)

End point title	Insomnia due to hand-wrist problems 6 weeks (PR)

End point description:

Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia. Per protocol analysis for comparison of the odds of insomnia between treatment groups at 6 weeks follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	95	87		
Units: 2 categories				
No	74	57		
Yes	21	30		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 weeks

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	182
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.007
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	0.34
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.16
upper limit	0.74

Secondary: BCTQ symptom severity and functional limitations 6 months (PR)

End point title	BCTQ symptom severity and functional limitations 6 months (PR)

End point description:

Per protocol analysis for comparison of overall BCTQ between treatment groups at 6 months follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	83	76		
Units: 1-5				
arithmetic mean (standard deviation)	2.09 (± 0.79)	2.02 (± 0.69)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	159
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.63
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.05
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.15
upper limit	0.25

Secondary: BCTQ symptom severity 6 months (PR)

End point title	BCTQ symptom severity 6 months (PR)

End point description:

Per protocol analysis for comparison of BCTQ symptom severity between treatment groups at 6 months follow-up (higher score indicates more severe symptoms) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	88	78		
Units: 1-5				
arithmetic mean (standard deviation)	2.28 (± 0.86)	2.15 (± 0.73)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	166
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.28
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.12
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.1
upper limit	0.35

Secondary: BCTQ functional limitations subscale 6 months (PR)

End point title	BCTQ functional limitations subscale 6 months (PR)

End point description:

Per protocol analysis for comparison of BCTQ functional limitations between treatment groups at 6 months follow-up (higher score indicates more functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	85	77		
Units: 1-5				
arithmetic mean (standard deviation)	1.89 (± 0.87)	1.84 (± 0.77)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	162
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.9
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.01
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.18
upper limit	0.2

Secondary: Hand-wrist pain intensity 6 months (PR)

End point title	Hand-wrist pain intensity 6 months (PR)

End point description:

Per protocol analysis for comparison of pain scores between treatment groups at 6 months follow-up (higher score indicates more pain) on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	92	78		
Units: 0-10				
arithmetic mean (standard deviation)	4.11 (± 2.99)	3.38 (± 2.79)		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	170
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.09
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.74

Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.11
upper limit	1.59

Secondary: Insomnia due to hand-wrist problems 6 months (PR)

End point title	Insomnia due to hand-wrist problems 6 months (PR)

End point description:

Participants were asked four questions how hand and wrist problems affects their sleep. Participants reporting hand and wrist problems affects their sleep on most nights on one or more questions were deemed to have insomnia. Per protocol analysis for comparison of the odds of insomnia between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	81	75		
Units: 2 categories				
No	61	59		
Yes	20	16		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	156
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.58
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.26
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.56
upper limit	2.85

Secondary: Referral to surgery at 6 months (PR)

End point title	Referral to surgery at 6 months (PR)

End point description:

Participants were asked if they were referred for surgery (carpal tunnel decompression) in the last 6 months. Per protocol analysis for comparison of the odds of insomnia between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	94	85		
Units: 2 categories				
No	78	74		
Yes	16	11		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Splint v Steroid injection
Number of subjects included in analysis	179
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.52
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.31
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.57
upper limit	3.01

Secondary: Herbal remedies and vitamin use 6 months (PR)

End point title	Herbal remedies and vitamin use 6 months (PR)

End point description:

Participants were asked if they had bought herbal remedies or vitamins to help with hand or wrist problems in the last 6 months. Per protocol analysis for comparison of the odds of herbal remedies and vitamin use between treatment groups at 6 months follow-up on participants with complete data.

Per protocol analysis on complete date was planned. Comparison of outcome between treatment arms planned to adjust for sex, age, and duration of symptoms. Logistic regression was not performed due to small number of 'yes' counts.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	81	73		
Units: 2 categories				
No	78	72		
Yes	3	1		

Statistical analyses

No statistical analyses for this end point

Secondary: Over the counter pain medication 6 months (PR)

End point title	Over the counter pain medication 6 months (PR)

End point description:

Participants were asked if they bought over the counter paracetamol, ibuprofen or co-codamol to help with hand or wrist problems in the last 6 months. Per protocol analysis for comparison of the odds of medication use between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	81	73		
Units: 2 categories				
No	65	58		
Yes	16	15		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	154
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.61
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	1.25
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.53
upper limit	2.95

Secondary: Prescribed pain medication 6 months (PR)

End point title	Prescribed pain medication 6 months (PR)

End point description:

Participants were asked if they were prescribed tablet medication (paracetamol, ibuprofen, naproxen, diclofenac, codeine, tramadol, co-codomal, tramacet, co-proxamol, dihydrocodeine, other) for hand or wrist problem in the last 6 months. Per protocol analysis for comparison of the odds of medication use between treatment groups at 6 months follow-up on participants with complete data.

End point type	Secondary

End point timeframe:

6 months

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	83	76		
Units: 2 categories				
No	70	70		
Yes	13	6		

Statistical analyses

Statistical analysis title	Per protocol analysis at 6 months

Statistical analysis description:

Per protocol analysis on complete date was performed. Comparison of outcome between treatment arms was adjusted for sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	159
Analysis specification	Pre-specified
Analysis type	superiority[1]
P-value	= 0.14
Method	Regression, Logistic
Parameter estimate	Odds ratio (OR)
Point estimate	2.24
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.77
upper limit	6.58

Notes:

[1] - Logistic regression was not performed due to small number of `yes' counts.

Secondary: BCTQ symptom severity and functional limitations 6 weeks (SG)

End point title	BCTQ symptom severity and functional limitations 6 weeks (SG)

End point description:

Subgroup analysis was performed in patients who were allocated the intervention of their preference. Comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	24	18		
Units: 1-5				
arithmetic mean (standard deviation)	1.88 (± 0.76)	2.19 (± 0.75)		

Statistical analyses

Statistical analysis title	Subgroup analysis at 6 weeks

Statistical analysis description:

Sub group analysis on complete data was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	42
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.014
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.52

Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.93
upper limit	-0.12

Secondary: BCTQ symptom severity and functional limitations 6 weeks (SG)

End point title	BCTQ symptom severity and functional limitations 6 weeks (SG)

End point description:

Subgroup analysis was performed in patients who did not receive the intervention of their preference. Comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	18	34		
Units: 1-5				
arithmetic mean (standard deviation)	2.15 (± 0.91)	2.40 (± 0.84)		

Statistical analyses

Statistical analysis title	Subgroup analysis at 6 weeks

Statistical analysis description:

Sub group analysis on complete data was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	52
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.53
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.12
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.5
upper limit	0.26

Secondary: BCTQ symptom severity and functional limitations 6 weeks (SG)	
End point title	BCTQ symptom severity and functional limitations 6 weeks (SG)

End point description:

Subgroup analysis was performed in patients who did not state a preference of intervention. Comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	67	61		
Units: 1-5				
arithmetic mean (standard deviation)	2.03 (± 0.79)	2.26 (± 0.69)		

Statistical analyses

Statistical analysis title	Subgroup analysis at 6 weeks

Statistical analysis description:

Sub group analysis on complete data was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	128
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.015
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.24
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.44
upper limit	-0.05

Secondary: BCTQ symptom severity and functional limitations 6 weeks (SG)	
End point title	BCTQ symptom severity and functional limitations 6 weeks (SG)

End point description:

Subgroup analysis was performed in patients who preferred injection. Comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	24	34		
Units: 1-5				
arithmetic mean (standard deviation)	1.88 (± 0.76)	2.40 (± 0.84)		

Statistical analyses

Statistical analysis title	Subgroup analysis at 6 weeks

Statistical analysis description:

Sub group analysis on complete data was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.

Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	58
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.002
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.6
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.97
upper limit	-0.23

Secondary: BCTQ symptom severity and functional limitations 6 weeks (SG)

End point title	BCTQ symptom severity and functional limitations 6 weeks (SG)

End point description:

Subgroup analysis was performed in patients who preferred splint. Comparison of overall BCTQ between treatment groups at 6 weeks follow-up (higher score indicates more severe symptoms and functional impairment) on participants with complete data. BCTQ: Boston Carpal Tunnel Questionnaire

End point type	Secondary

End point timeframe:

6 weeks

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	18	34		
Units: 1-5				
arithmetic mean (standard deviation)	2.15 (± 0.91)	2.40 (± 0.84)		

Statistical analyses

Statistical analysis title	Subgroup analysis at 6 weeks
Statistical analysis description:	
Sub group analysis on complete data was performed. Comparison of outcome between treatment arms was adjusted for baseline score, sex, age, and duration of symptoms.	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	52
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.25
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.22
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.6
upper limit	0.16

Secondary: NHS cost differences at 6 months

End point title	NHS cost differences at 6 months
End point description:	
Cost of interventions at 6 months	
End point type	Secondary
End point timeframe:	
6 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-infinity				
arithmetic mean (standard deviation)	346.78 (± 467.97)	313.24 (± 480.84)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description:	
Comparison of outcome between treatment groups performed on multiply imputed data	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	33.54
Confidence interval	
level	95 %
sides	2-sided
lower limit	-94.57
upper limit	145.59

Secondary: NHS cost differences at 6 months (CC)

End point title	NHS cost differences at 6 months (CC)
End point description:	
Complete case analysis on the cost of interventions at 6 months	
End point type	Secondary
End point timeframe:	
6 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-infinity				
arithmetic mean (standard deviation)	353.48 (± 512.85)	306.42 (± 524.51)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description:	
Comparison of outcome between treatment groups on complete data.	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	47.06
Confidence interval	
level	95 %
sides	2-sided
lower limit	-104.84
upper limit	187.31

Secondary: NHS cost differences at 12 months

End point title	NHS cost differences at 12 months
End point description:	
Cost of interventions at 6 months	
End point type	Secondary
End point timeframe:	
12 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-infinity				
arithmetic mean (standard deviation)	508.69 (± 657.48)	395.54 (± 596.47)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description:	
Comparison of outcome between treatment groups	
Comparison groups	Steroid injection v Splint

Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	113.15
Confidence interval	
level	95 %
sides	2-sided
lower limit	-37.09
upper limit	279.21

Secondary: NHS cost differences at 24 months

End point title	NHS cost differences at 24 months
End point description: Cost of interventions at 24 months	
End point type	Secondary
End point timeframe: 24 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-infinity				
arithmetic mean (standard deviation)	657.87 (± 808.57)	586.77 (± 783.45)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description: Comparison of outcome between treatment groups	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	71.1

Confidence interval	
level	95 %
sides	2-sided
lower limit	-120.84
upper limit	291.24

Secondary: QALYS at 6 months (cross-walk tariff)

End point title	QALYS at 6 months (cross-walk tariff)
End point description: QALYS (Quality adjusted life years)	
End point type	Secondary
End point timeframe: 6 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-1				
arithmetic mean (standard deviation)	0.354 (± 0.093)	0.356 (± 0.087)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description: Comparison of outcome between treatment groups adjusted for baseline utility	
Comparison groups	Splint v Steroid injection
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	0.008
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.01
upper limit	0.02

Secondary: QALYS at 12 months (cross-walk tariff)

End point title	QALYS at 12 months (cross-walk tariff)

End point description: QALYS (Quality adjusted life years)	
End point type	Secondary
End point timeframe: 12 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-1				
arithmetic mean (standard deviation)	0.723 (± 0.163)	0.736 (± 0.156)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description: Comparison of outcome between treatment groups adjusted for baseline utility	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.003
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.034
upper limit	0.027

Secondary: QALYS at 24 months (cross-walk tariff)

End point title	QALYS at 24 months (cross-walk tariff)
End point description:	
End point type	Secondary
End point timeframe: 24 months	

End point values	Steroid injection	Splint		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	116	118		
Units: 0-1				
arithmetic mean (standard deviation)	1.461 (± 0.311)	1.497 (± 0.301)		

Statistical analyses

Statistical analysis title	Health economics analysis
Statistical analysis description: Comparison of outcome between treatment groups adjusted for baseline utility	
Comparison groups	Steroid injection v Splint
Number of subjects included in analysis	234
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean difference (final values)
Point estimate	-0.022
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.093
upper limit	0.045

Adverse events

Adverse events information

Timeframe for reporting adverse events:

24 months

Adverse event reporting additional description:

Reporting by investigators. Expected related adverse events self-reported by participants in 6-week questionnaire

Assessment type	Non-systematic

Dictionary used

Dictionary name	CTCAE
Dictionary version	4.0

Reporting groups

Reporting group title	Steroid injection

Reporting group description:

One injection of 20mg methylprednisolone acetate to inflitrate the carpal tunnel

Reporting group title	Splint

Reporting group description:

Participants received a beta wrist brace which immobilised the wrist in a neutral or slightly extended position intended to reduce pressure within the carpal tunnel, to wear at night for 6 weeks.

Serious adverse events	Steroid injection	Splint	
Total subjects affected by serious adverse events			
subjects affected / exposed	3 / 116 (2.59%)	4 / 118 (3.39%)	
number of deaths (all causes)	2	0	
number of deaths resulting from adverse events	2	0	
Injury, poisoning and procedural complications			
Fracture	Additional description: Open comminuted fracture left middle finger, operative fixation with K-wires		
subjects affected / exposed	0 / 116 (0.00%)	1 / 118 (0.85%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Cardiac disorders			
Cardiac failure			
subjects affected / exposed	1 / 116 (0.86%)	0 / 118 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 1	0 / 0	
Myocardial infarction			

subjects affected / exposed	0 / 116 (0.00%)	1 / 118 (0.85%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Respiratory, thoracic and mediastinal disorders			
Other	Additional description: Cryptogenic organising pneumonia		
subjects affected / exposed	1 / 116 (0.86%)	0 / 118 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 1	0 / 0	
Musculoskeletal and connective tissue disorders			
Other	Additional description: Patella resurfacing		
subjects affected / exposed	1 / 116 (0.86%)	0 / 118 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Arthritis	Additional description: Total arthroplasty for osteoarthritis (one hip, one knee)		
subjects affected / exposed	0 / 116 (0.00%)	2 / 118 (1.69%)	
occurrences causally related to treatment / all	0 / 0	0 / 2	
deaths causally related to treatment / all	0 / 0	0 / 0	

Frequency threshold for reporting non-serious adverse events: 0 %

Non-serious adverse events	Steroid injection	Splint	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	57 / 116 (49.14%)	7 / 118 (5.93%)	
Vascular disorders			
Flushing			
subjects affected / exposed	17 / 116 (14.66%)	0 / 118 (0.00%)	
occurrences (all)	17	0	
Skin and subcutaneous tissue disorders			
Other	Additional description: Thinning, lightening or darkening of skin at injection site		
subjects affected / exposed	4 / 116 (3.45%)	0 / 118 (0.00%)	
occurrences (all)	4	0	
Musculoskeletal and connective tissue disorders			
Arthralgia	Additional description: For steroid injection, hand or wrist was more painful following injection. For splinting, participants unable to wear splint because of discomfort.		

subjects affected / exposed occurrences (all)	53 / 116 (45.69%) 53	7 / 118 (5.93%) 7	

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
03 July 2013	Addition of questions concerning baseline characteristics, prognostic factors, employment, and effect of previous treatments to participant questionnaires. Changes to consent form, participant information leaflet.
12 September 2013	Change to protocol, participant information leaflet and consent form detailing hosting of the trial database on the University of Birmingham secure server.
07 November 2014	Change to protocol, participant information leaflet and consent form detailing moving trial database to Keele University secure server. Addition of question concerning laterality of symptoms to baseline questionnaire.
19 March 2015	Addition of two questions about undergoing surgery for hand/wrist problems to minimum data collection questionnaires.
21 May 2015	Clarification within protocol of the original intention with regard to processes relating to supply and administration of trial IMP under a patient group directive by specified authorised healthcare professionals.
08 August 2016	Change of Chief Investigator
18 January 2018	Clarification of reporting processes for deaths, non-fatal SAEs and pregnancies after 6-week follow-up.
03 September 2018	Update to Summary of Product Characteristics for methylprednisolone acetate.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

Trial participants and clinicians were not masked to treatment allocation. We recruited two short of the target 240 participants; however, statistical power was retained because of higher than anticipated follow-up rates.

Notes:

Online references

http://www.ncbi.nlm.nih.gov/pubmed/27716159

http://www.ncbi.nlm.nih.gov/pubmed/30343858