Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Explanation of the Components of the GRADE Tool and How They Were Assessed.

Grading of the certainty of evidence was performed separately for each outcome measure and for each follow up time period for each comparison of interventions. *ER ROM, external rotation range of movement; VAS, visual analogue scale*

GRADE sub-	Method of assessment
component	
Overall risk of	Certainty of evidence was downgraded if the "high overall risk" studies contributed to more than 50% of the weight in the
bias	pairwise meta-analysis.
Imprecision of results	Assessed with the optimal information size. This was tested by performing a conventional sample size calculation; if the total number of patients in the included comparisons was lower than that generated by the sample size calculation, the evidence was downgraded. A minimum of 59, 45 and 81 participants were required in each treatment group to detect a minimal clinically relevant difference (MRCD) of 1 point in VAS pain, 10 points in functional scales and 10 degrees in ER ROM respectively at a confidence of 95% (type I error) and power of 80% (type II error)
Inconsistency of evidence	Inconsistency was assessed with tests for heterogeneity (Tau ² , Chi ² and I ² tests). Where the inconsistency index defined the heterogeneity as greater than 50% (substantial), sensitivity analyses were performed to identify and remove the studies that were responsible for the inconsistency where possible and the data were re-analysed. No more than one study from each comparison could be removed. Where not possible or in comparisons with 3 or less studies, the evidence was downgraded by one step. Where the I ² statistic was greater than 75% the meta-analysis was abandoned.
Indirectness of evidence	Assessed by the compared interventions, included populations and outcome measures. Where those were considered to be non-clinically relevant and where there was thought to be significant diversity in the included populations of the compared groups with regard to a) inclusion of patients with specific conditions (e.g. diabetics), b) duration of symptoms and c) home exercise the evidence was downgraded.
Other	Publication bias assessed by the construction of funnel plots where 10 or more studies were included in the same pairwise meta- analysis.

eTable 2a. Risk of Bias Assessment for Patient-Reported Outcomes (pain, function).

?, unclear risk

First Author (year)		Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)										
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk				
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting						
Arslan et al. (2001)	?	?	High	High	Low	High	High	High				
Bal et al. (2008)	Low	?	High	High	High	Low	Low	High				
Binder et al. (1986)	?	?	High	High	Low	High	Low	High				
Blockey et al. (1954)	?	?	?	?	High	High	High	High				
Buchbinder et al. (2004a)	Low	Low	Low	Low	Low	Low	High	Low				
Buchbinder et al. (2004b)	Low	Low	Low	Low	Low	Low	Low	Low				
Bulgen at al. (1984)	?	?	High	High	Low	High	Low	High				
Calis et al. (2006)	?	?	High	High	Low	Low	Low	Low				
Carette et al. (2003)	Low	Low	Low	Low	Low	Low	Low	Low				
Cheing et al. (2008)	?	High	High	High	Low	Low	High	High				
	Internal Validity											

First Author (year)		(Cochrane's Collaboration Tool for Assessing Risk of Bias)										
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk				
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting						
Chen et al. (2014)	Low	Low	High	High	Low	?	Low	Low				
Cho et al. (2016)	Low	?	High	High	High	low	Low	High				
Dacre et al. (1989)	?	?	?	?	High	High	Low	Unclear				
Dahan et al. (1999)	Low	Low	Low	Low	Low	Low	High	Low				
De Carli et al. (2012)	?	?	High	High	Low	High	?	High				
Dehghan et al. (2013)	Low	?	High	High	High	High	Low	High				
Gallacher et al. (2018)	Low	High	High	High	Low	High	Low	High				
Gam et al. (1998)	Low	High	High	High	Low	Low	Low	High				
Hsieh et al. (2012)	Low	?	High	High	Low	Low	High	High				
Jacobs et al. (1991)	?	?	High	High	High	Low	High	High				
Jacobs et al. (2009)	?	Low	High	High	Low	High	Low	High				

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)									
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk		
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting				
Jones & Chattopadhyay (1999)	?	Low	High	High	Low	High	High	High		
Khallaf et al. (2018)	?	?	High	High	?	High	High	High		
Khan et al. (2005)	Low	High	High	High	High	?	High	High		
Kim et al. (2017)	Low	?	?	?	High	Low	Low	Unclear		
Kivimäki & Pohjolainen (2001)	?	?	High	?	High	High	High	High		
Kivimäki et al. (2007)	Low	Low	High	High	High	High	?	High		
Klc et al. (2015)	Low	Low	High	High	Low	Low	High	High		
Koh et al. (2013)	Low	?	High	High	Low	?	Low	Low		
Kraal et al. (2018)	Low	Low	?	?	High	Low	Low	Low		
Lee et al. (1974)	?	?	High	?	?	High	High	High		

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)									
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk		
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting				
Lee et al. (2017a)	Low	?	?	?	Low	Low	Low	Unclear		
Lee et al. (2017b)	?	?	High	High	?	High	High	High		
Lim et al. (2014)	Low	Low	?	?	?	High	Low	Unclear		
Lo et al. (2020)	?	High	?	High	?	?	High	High		
Lorbach et al. (2010)	?	?	High	High	Low	Low	Low	Low		
Ma et al. (2006)	?	?	High	High	Low	?	High	High		
Maryam et al. (2012)	?	?	High	High	High	High	High	High		
Mukherjee et al. (2017)	Low	?	High	High	Low	Low	?	Low		
Mun & Baek (2016)	Low	Low	High	High	Low	Low	Low	Low		
Oh et al. (2011)	Low	Low	?	?	Low	High	Low	Low		
Park & Hwnag (2000)	High	High	High	High	Low	Low	Low	High		

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)									
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk		
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting				
Park et al. (2013)	Low	?	Low	Low	Low	Low	Low	Low		
Park et al. (2014)	?	High	High	High	?	Low	High	High		
Park et al. (2015)	?	?	High	High	?	High	High	High		
Prestgaard et al. (2015)	Low	Low	High	High	Low	Low	Low	Low		
Pushpasekaran et al. (2017)	?	?	High	High	?	High	Low	High		
Quraishi et al. (2007)	Low	?	High	High	Low	High	High	High		
Ranalletta et al (2015)	Low	?	High	High	low	low	Low	Low		
Reza et al (2013)	?	Low	Low	Low	Low	Low	Low	Low		
Rizk et al (1991)	?	?	High	High	High	High	Low	High		
Roh et al (2011)	Low	Low	High	High	High	Low	Low	High		

First Author (year)	Internal Validity									
			(Cochrane's	Collaboration Too	l for Assessing F	Risk of Bias)				
	Selecti	Selection bias		Detection bias	Attrition bias	Reporting bias	Other	Overall Risk		
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting				
Rouhani et al. (2016)	Low	?	Low	Low	Low	Low	Low	Low		
Ryans et al. (2005)	Low	Low	High	High	Low	High	Low	High		
Schroder et al. (2017)	Low	Low	Low	Low	Low	Low	Low	Low		
Schydlowsky et al (2012)	?	Low	High	High	High	High	High	High		
Sharma et al. (2016)	Low	Low	Low	Low	Low	Low	Low	Low		
Shin & Lee (2013)	Low	Low	High	High	High	Low	?	High		
Sun et al. (2001)	?	?	High	High	Low	Low	Low	Low		
Sun et al. (2018)	?	Low	?	Low	Low	High	Low	Low		
Tveita et al. (2008)	Low	Low	High	High	Low	Low	?	Low		
Vahdatpour et al. (2014)	Low	?	Low	?	Low	High	High	Low		
van der Windt et al. (1997)	Low	?	High	High	Low	High	High	High		

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)										
	Selecti	Selection bias Performance bias Detection bias Attrition bias Reporting bias									
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting					
Widiastuti- Samekto & Sianturi (2004)	Low	?	?	?	Low	Low	High	Unclear			
Yoon et al. (2016)	Low	Low	Low	Low	Low	Low	Low	Low			

First Author (year)				Internal V	'alidity			
			(Cochrane's	Collaboration Too	ol for Assessing F	Risk of Bias)		
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting		
Arslan et al. (2001)	?	?	High	?	Low	High	High	High
Bal et al. (2008)	Low	?	High	Low	High	Low	Low	Low
Binder et al. (1986)	?	?	High	Low	Low	High	Low	Low
Blockey et al. (1954)	?	?	?	Low	High	High	High	High
Buchbinder et al. (2004a)	Low	Low	Low	Low	Low	Low	High	Low
Buchbinder et al. (2004b)	Low	Low	Low	Low	Low	Low	Low	Low
Bulgen at al. (1984)	?	?	High	?	Low	High	Low	Unclear
Calis et al. (2006)	?	?	High	High	Low	Low	Low	Low
Carette et al. (2003)	Low	Low	Low	Low	Low	Low	Low	Low
Cheing et al. (2008)	?	High	High	High	Low	Low	High	High

First Author (year)		Internal Validity										
		(Cochrane's Collaboration Tool for Assessing Risk of Bias)										
	Select	Selection bias		Detection bias	Attrition bias	Reporting bias	Other	Overall Risk				
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting						
Chen et al. (2014)	Low	Low	High	Low	Low	?	Low	Low				
Cho et al. (2016)	Low	?	High	low	High	low	Low	Low				
Dacre et al. (1989)	?	?	?	Low	High	High	Low	Unclear				
Dahan et al. (1999)	Low	Low	Low	Low	Low	Low	High	Low				
De Carli et al. (2012)	?	?	High	?	Low	High	?	Unclear				
Dehghan et al. (2013)	Low	?	High	?	High	High	Low	High				
Gallacher et al. (2018)	Low	High	High	High	Low	High	Low	High				
Gam et al. (1998)	Low	High	High	High	Low	Low	Low	High				
Hsieh et al. (2012)	Low	?	High	Low	Low	Low	High	Low				
Jacobs et al. (1991)	?	?	High	Low	High	Low	High	High				
Jacobs et al. (2009)	?	Low	High	?	Low	High	Low	Low				

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)									
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk		
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting				
Jones & Chattopadhyay (1999)	?	Low	High	High	Low	High	High	High		
Khallaf et al. (2018)	?	?	High	High	?	High	High	High		
Khan et al. (2005)	Low	High	High	High	High	?	High	High		
Kim et al. (2017)	Low	?	?	?	High	Low	Low	Unclear		
Kivimäki & Pohjolainen (2001)	?	?	High	?	High	High	High	High		
Kivimäki et al. (2007)	Low	Low	High	low	High	High	?	High		
Klc et al. (2015)	Low	Low	High	Low	Low	Low	High	Low		
Koh et al. (2013)	Low	?	High	Low	Low	?	Low	Low		
Kraal et al. (2018)	Low	Low	?	?	High	Low	Low	Low		
Lee et al. (1974)	?	?	High	?	?	High	High	High		

First Author (year)		Internal Validity											
			(Cochrane's	s Collaboration Toc	ol for Assessing F	lisk of Bias)	OtherOverall RiskLowLowHighHighLowLowHighHighLowUnclearHighHighHighHighLowUnclearHighHighLowLowLowLowLowLowLowLowLowLowLowLowLowLowLowLowLowLow						
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk					
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting							
Lee et al. (2017a)	Low	?	?	Low	Low	Low	Low	Low					
Lee et al. (2017b)	?	?	High	?	?	High	High	High					
Lim et al. (2014)	Low	Low	?	Low	?	High	Low	Low					
Lo et al. (2020)	?	High	?	High	?	?	High	High					
Lorbach et al. (2010)	?	?	High	?	Low	Low	Low	Unclear					
Ma et al. (2006)	?	?	High	?	Low	?	High	Unclear					
Maryam et al. (2012)	?	?	High	?	High	High	High	High					
Mukherjee et al. (2017)	Low	?	High	?	Low	Low	?	Unclear					
Mun & Baek (2016)	Low	Low	High	Low	Low	Low	Low	Low					
Oh et al. (2011)	Low	Low	?	?	Low	High	Low	Low					
Park & Hwnag (2000)	High	High	High	High	Low	Low	Low	High					

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)										
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk			
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting					
Park et al. (2013)	Low	?	Low	Low	Low	Low	Low	Low			
Park et al. (2014)	?	High	High	High	?	Low	High	High			
Park et al. (2015)	?	?	High	?	?	High	High	High			
Prestgaard et al. (2015)	Low	Low	High	Low	Low	Low	Low	Low			
Pushpasekaran et al. (2017)	?	?	High	High	?	High	Low	High			
Quraishi et al. (2007)	Low	?	High	Low	Low	High	High	High			
Ranalletta et al (2015)	Low	?	High	low	low	low	Low	Low			
Reza et al (2013)	?	Low	Low	Low	Low	Low	Low	Low			
Rizk et al (1991)	?	?	High	Low	High	High	Low	High			
Roh et al (2011)	Low	Low	High	High	High	Low	Low	High			

First Author (year)		Internal Validity									
			(Cochrane's	Collaboration Too	l for Assessing F	Risk of Bias)					
	Select	ion bias	Performance bias	Detection bias	Attrition bias	Reporting bias	Other	Overall Risk			
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting					
Rouhani et al. (2016)	Low	?	Low	Low	Low	Low	Low	Low			
Ryans et al. (2005)	Low	Low	High	Low	Low	High	Low	Low			
Schroder et al. (2017)	Low	Low	Low	Low	Low	Low	Low	Low			
Schydlowsky et al (2012)	?	Low	High	High	High	High	High	High			
Sharma et al. (2016)	Low	Low	Low	Low	Low	Low	Low	Low			
Shin & Lee (2013)	Low	Low	High	Low	High	Low	?	Low			
Sun et al. (2001)	?	?	High	Low	Low	Low	Low	Low			
Sun et al. (2018)	?	Low	?	Low	Low	High	Low	Low			
Tveita et al. (2008)	Low	Low	High	High	Low	Low	?	Low			
Vahdatpour et al. (2014)	Low	?	Low	?	Low	High	High	Low			
van der Windt et al. (1998)	Low	?	High	Low	Low	High	High	High			

First Author (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)										
	Selecti	Selection bias Performance bias Detection bias Attrition bias Reporting bias									
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting					
Widiastuti- Samekto & Sianturi (2004)	Low	?	?	Low	Low	Low	High	Low			
Yoon et al. (2016)	Low	Low	Low	Low	Low	Low	Low	Low			

eTable 3. Results of Comparisons of Interventions Assessed by Fewer Than 3 Studies and Were Not Pooled Qualitatively or Quantitatively

Treatment modes	First author (year)	Pain	Functional Disability (SPADI/DASH)	Function (Constant/HAQ/SST)	ROM ER	ROM ABD	ROM FL	Satisfaction
Arthrographic distension + IA Corticosteroid vs placebo/no treatment	Buchbinder et al. (2004b)	ightarrow 3w ↔ 6w, 12w	ightarrow 3w ↔ 6w, 12w	-	↔ 3w, 6w, 12w	↑3w ↔ 6w, 12w	↔ 3w, 6w, 12w	-
	Sharma et al. (2016)	↓ 4w, 8w	↑ 4w, 8w	-	个 4w, 8w	个 4w, 8w	-	-
Arthrographic distension + IA Corticosteroid vs Arthrographic distension	Jacobs et al. (1991)	-	-	-	↔ 4m	∱4m	个4m	-
Arthrographic distension vs IA Corticosteroid	Jacobs et al. (1991)	-	-	-	\leftrightarrow 4m	↓ 4m	↓ 4m	-
Arthrographic distension + IA Sodium Hyaluronate vs IA Corticosteroid	Park et al. (2013)	↔ 2w, 6w	↔ 2w, 6w	-	↑ 2w, 6w	↔ 2w, 6w	↔ 2w, 6w	-
Arthrographic distension + IA Corticosteroid +	Khan et al. (2005)	↔ 8w	-	-	个 8w	个8w	-	-
Physiotherapy vs Physiotherapy	Park et al. (2014)	↔ 4w	↔ 4w	\leftrightarrow 4w	↔ 4w	\leftrightarrow 4w	↔ 4w	-
Arthrographic distension + IA Corticosteroid vs SA Corticosteroid	Yoon et al. (2016)	↑ 4w ↔ 12w, 6m	-	↑ 4w, 12w ↔ 6m	↑ 4w ↔ 12w, 6m	-	↑ 4w ↔ 12w, 6m	-
Arthrographic distension + MUA vs IA Corticosteroid	Mun & Baek (2016)	ightarrow 2w, 6w, 12w ↔ 6m, 12m	-	↑ 2w, 6w, 12w ↔ 6m, 12m	↑ 2w, 6w ↔ 12w, 6m, 12m	-	↑ 2w, 6w ↔ 12w, 6m, 12m	↑ 2w, 6w, 12w ↔ 6m, 12m

Arthrographic distension	Quraishi et al. (2007)	↓ 8w, 6m	-	个 8w, 6m	\leftrightarrow 8w, 6m	\leftrightarrow 8w, 6m	↔ 8w, 6m	-
vs MUA + IA								
Corticosteroid								
Treatment modes	First author (year)	Pain	Functional Disability (SPADI/DASH)	Function (Constant/HAQ/SST)	ROM ER	ROM ABD	ROM FL	Satisfaction
Arthrographic distension + IA Corticosteroid vs ACR + IA Corticosteroid	Gallacher et al. (2018)	-	-	↔ 6w ↓ 12w, 6m	↓ 6w, 12w, 6m	↔ 6m	↓ 6m	↔ 6w, 12w, 6m
Arthrographic distension + IA Corticosteroid + Physiotherapy vs Arthrographic distension + IA Corticosteroid	Park et al. (2014)	↓ 4w	↓4w	↑ 4w	↑ 4w	↑ 4w	↑ 4w	-
Arthrographic distension + IA Corticosteroid vs Physiotherapy	Park et al. (2014)	个 4w	↔4w	↓ 4w	↓ 4w	↓ 4w	↓ 4w	-
PO Corticosteroid vs ESWT	Chen et al. (2014)	↔ 2w, 4w, 6w, 12w	-	$\leftrightarrow 2w$ $\downarrow 4w, 6w, 12w$	↔ 2w, 4w ↓ 6w, 12w	↔ 2w, 4w ↓ 6w, 12w	↔2w ↓4w, 6w, 12w	-
Rotator interval Corticosteroid vs SA Corticosteroid	Sun et al. (2018)	↓ 4w, 8w, 12w	↓ 4w, 8w, 12w	个 4w, 8w, 12w	个 4w, 8w, 12w	↑ 4w, 8w, 12w	个 4w, 8w, 12w	-
Rotator interval Corticosteroid vs IA Corticosteroid	Sun et al. (2018)	↓ 4w, 8w, 12w	↓ 4w, 8w, 12w	个 4w, 8w, 12w	个 4w, 8w, 12w	↑ 4w, 8w, 12w	个 4w, 8w, 12w	-
IA Corticosteroid + Physiotherapy vs Long Head of Biceps Corticosteroid + Physiotherapy	Lee et al (1974)	-	-	-	↔ 1w, 3w, 4w, 5w, 6w ↑2w	↔ 1w, 3w, 4w, 5w, 6w ↑2w	-	-

IA + Rotator Interval	Prestgaard et al	\leftrightarrow 3w, 6w, 12w ,	\leftrightarrow 3w, 6w, 12w,	-	\leftrightarrow 3w, 6w, 12w,	↔ 3w, 6w, 12w, 6m	\leftrightarrow 3w, 6w, 12w,	↔ 3w, 6w, 12w,
Corticosteroid vs IA	(2015)	6m	6m		6m		6m	6m
Corticosteroid								
Treatment modes	First author (year)	Pain	Functional Disability (SPADI/DASH)	Function (Constant/HAQ/SST)	ROM ER	ROM ABD	ROM FL	Satisfaction
IA + Rotator Interval Corticosteroid vs no treatment	Prestgaard et al (2015)	↓ 6w, 12w ↔ 3w, 6m	↓ 3w, 6w, 12w ↔ 6m	-	↔ 3w, 6w, 12w, 6m	↑ 12w ↔ 3w, 6w, 6m	↑ 3w, 6w ↔ 12w, 6m	↑ 12w ↔ 3w, 6w, 6m
Long Head of Biceps Corticosteroid + Physiotherapy vs Analgesia	Lee et al (1974)	-	-	-	个1w, 2w, 3w, 4w, 5w, 6w	↑1w, 2w, 3w, 4w, 5w, 6w	-	-
IA + SA Corticosteroid vs no treatment	Shin & Lee (2013)	↓ 2w, 4w, 8w, 4m ↔ 6m	-	个 2w, 4w, 8w, 4m	个 2w, 4w, 8w, 4m	-	↑ 2w, 4w, 8w, 4m ↔ 6m	↑ 2w, 4w, 8w, 4m ↔ 6m
IA Corticosteroid vs IA +	Shin & Lee (2013)	\leftrightarrow 2w, 4w, 8w,	-	\leftrightarrow 2w, 4w, 8w, 4m,	\leftrightarrow 2w, 4w, 8w,	-	\leftrightarrow 2w, 4w, 8w.	\leftrightarrow 2w, 4w, 8w, 4m,
SA Corticosteroid		4m, 6m		6m	4m, 6m		4m, 6m	6m
	Cho et al (2016)	↔ 12w	-	↔ 12w	↔12w	↔12w	↔12w	-
SA Corticosteroid vs IA + SA Corticosteroid	Shin & Lee (2013)	↔ 2w, 4w, 8w, 4m, 6m	-	↔ 2w, 4w, 8w, 4m, 6m	↔ 2w, 4w, 8w, 4m, 6m	-	↔ 2w, 4w, 8w, 4m, 6m	↔ 2w, 4w, 8w, 4m, 6m
	Cho et al (2016)	↓ 12w	-	↑ 12w	↔ 12w	\leftrightarrow 12w	↔ 12w	-
SA Corticosteroid vs no treatment	Shin & Lee (2013)	↓ 2w, 4w, 8w, 4m ↔ 6m	-	↑ 2w, 4w, 8w, 4m ↔ 6m	1 ↑ 2w, 4w, 8w, 4m ↔ 6m	-	1 ↑ 2w, 4w, 8w, 4m ↔ 6m	↑ 2w, 4w, 8w, 4m ↔ 6m
	Rizk et al. (1991)	↔ 1-11w, 4m, 6m	-	-	-	-	-	-

IA Corticosteroid vs	Pushpasekaran et al.	↑ 3w, 6w	-	↓ 3w, 6w, 6m	-	-	-	-
three-site Corticosteroid	(2017)							
		\leftrightarrow 6m						
Treatment modes	First author (year)	Pain	Functional	Function	ROM ER	ROM ABD	ROM FL	Satisfaction
			Disability	(Constant/HAQ/SST)				
			(SPADI/DASH)					
IA Corticosteroid vs PO	Lorbach et al (2010)	\leftrightarrow 4w, 8w, 12w,	-	↑ 4w, 8w, 12w, 6m,	↑ 4w, 8w	个 8w, 6m, 12m	↑ 4w, 8w, 12w	-
Corticosteroid		6m, 12m		12m				
					\leftrightarrow 12w, 6m, 12m	\leftrightarrow 4w, 12w	\leftrightarrow 6m, 12m	
IA Corticosteroid +	Widiastuti-Samekto &	↓ 1w	-	-	-	-	-	-
Physiotherapy vs PO	Sianturi (2003)							
Corticosteroid +		\leftrightarrow 2w, 3w						
Physiotherapy								
PO Corticosteroid vs	Blockey et al (1954)	\leftrightarrow 4m	-	-	-	NS	-	-
Placebo/no treatment								
	Buchbinder et al	↓ 3w	↓ 3w	↑ 3w	\leftrightarrow 3w, 6w, 12w	个 3w	↑ 3w	\leftrightarrow 3w, 6w, 12w
	(2004a)							
		↔6w	\leftrightarrow 6w	\leftrightarrow 6w		\leftrightarrow 6w	↔6w	
		↑ 12w	↑ 12w	↓ 12w		↓ 12w	↓ 12w	
	Binder et al. (1986)	\leftrightarrow 2w, 4w, 6w,	-	-	\leftrightarrow 2w, 4w, 6w,	\leftrightarrow 2w, 4w, 6w, 12w,	\leftrightarrow 2w, 4w, 6w,	-
		12w, 5m, 6m, 7m,			12w, 5m, 6m, 7m,	5m, 6m, 7m, 8m	12w, 5m, 6m, 7m,	
		8m			8m		8m	
IA Sodium hyaluronate vs	Calis et al (2006)	\leftrightarrow 2w, 12w	-	↓ 2w	↓ 2w, 12w	↓ 2w	-	-
Physiotherapy								
				⇔12w		↔12w		
IA Sodium hyaluronate vs	Calis et al (2006)	\leftrightarrow 2w, 12w	-	\leftrightarrow 2w, 12w	\leftrightarrow 2w, 12w	\leftrightarrow 2w, 12w	-	-
IA Corticosteroid								
IA Sodium hyaluronate vs	Calis et al (2006)	\leftrightarrow 2w, 12w	-	\leftrightarrow 2w	\leftrightarrow 2w, 12w	\leftrightarrow 2w, 12w	-	-
no treatment								
				↑ 12w				

IA Sodium hyaluronate +	Kim et al. (2017)	↓ 1w, 2w	\leftrightarrow 1w, 2w, 3w,	\leftrightarrow 1w, 2w, 3w, 4w,	\leftrightarrow 1w, 2w, 3w,	\leftrightarrow 1w, 2w, 3w, 4w,	-	-
IA Tramadol vs IA Sodium			4w, 6w	6w	4w, 6w	6w		
Hyaluronate		\leftrightarrow 3w, 4w, 6w						
Treatment modes	First author (year)	Pain	Functional	Function	ROM ER	ROM ABD	ROM FL	Satisfaction
			Disability	(Constant/HAQ/SST)				
			(SPADI/DASH)					
IA Sodium Hyaluronate +	Hsieh et al. (2012)	\leftrightarrow 6w, 12w	\leftrightarrow 6w, 12w	-	\leftrightarrow 6w, 12w	\leftrightarrow 6w, 12w	\leftrightarrow 6w, 12w	\leftrightarrow 6w, 12w
Physiotherapy vs								
Physiotherapy								
IA Corticostoroid vs IA	Lim at al (2014)				∠→ 12w/		∠> 12w	
Sodium Hyaluronate		<	-	<	<→ 12W	-	<→ 12W	-
Sourdin Hydraronate								
IA Corticosteroid vs	Schydlowsky et al	-	\leftrightarrow 2w, 4w, 8w,	\leftrightarrow 2w, 4w, 8w, 12w,	\leftrightarrow 2w, 4w, 8w,	\leftrightarrow 2w, 4w, 8w, 12w,	\leftrightarrow 2w, 4w, 8w,	-
Adilubimab	(2012)		12w, 6m	6m	12w, 6m	6m	12w, 6m	
Suprascapular nerve	Dahan et al. (1999)	\leftrightarrow 4w	\leftrightarrow 4w		\leftrightarrow 4w	\leftrightarrow 4w	\leftrightarrow 4w	-
block vs Placebo								
Suprascapular nerve	Jones &	↓ 12w	-	-	↑ 12w	↑ 12w	-	-
block vs IA Corticosteroid	Chattopadhyay (1999)							
Suprascapular nerve	Dahan et al. (2000)	↓ 4w	-	\leftrightarrow 4w	\leftrightarrow 4w	\leftrightarrow 4w	\leftrightarrow 4w	-
block + Physiotherapy vs								
Physiotherapy (+/-	Kic et al. (2015)	↓ 3w, 7w	-	↑ 3w	-	-	-	-
placebo)				() 7				
				\leftrightarrow /w				
Intranasal calcitonin +	Rouhani et al. (2016)	↓ 6w	个 6w		个 6w	个 6w	个 6w	↑ 6w
Physiotherapy vs								
intransal Placebo +								
Physiotherapy								
,								
MUA + ACR vs IA	De Carli et al. (2012)	-	-	↔ 6w, 12m	↔ 6w, 12m	↔ 6w, 12m	\leftrightarrow 6w, 12m	-
Corticosteroid +								
Physiotherapy								

MUA vs IA Corticosteroid	Jacobs et al. (2009)	\leftrightarrow 2w, 6w, 12w,	-	\leftrightarrow 2w, 6w, 12w, 4m	-	-	-	\leftrightarrow 2w, 6w, 12w,
+ Arthrographic		4m						4m
distension								
Treatment modes	First author (year)	Pain	Functional	Function	ROM ER	ROM ABD	ROM FL	Satisfaction
			Disability (SPADI/DASH)	(Constant/HAQ/SST)				
MUA + IA Corticosteroid	Kivimäki &	-	-	-	\leftrightarrow 4m	\leftrightarrow 4m	\leftrightarrow 4m	-
vs MUA	Pohjolainen (2001)							
MUA vs no treatment	Kivimäki et al. (2007)	\leftrightarrow 6w, 12w, 6m,	\leftrightarrow 6w, 12w, 6m,	↔ 6w, 12w, 6m,	\leftrightarrow 6w, 12w, 6m,	\leftrightarrow 6w, 12w, 6m,	↔ 6w 6m, 12m	-
		12m	12m	12m	12m	12m	A 12	
							1. 15M	
ACR vs IA Corticosteroid	Mukherjee et al.	↔ 4w	-	↑ 4w, 8w, 12w, 4m,	个 4w, 8w, 12w,	↑ 4w, 8w, 12w, 4m,	↑ 4w, 8w, 12w,	-
	(2017)			5m	4m, 5m	5m	4m, 5m	
		↓ 8w, 12w, 4m,						
		511						
Acupuncture +	Ma et al. (2006)	↓4w	-	-	\leftrightarrow 4w	\leftrightarrow 4w	↔ 4w	-
Physiotherapy vs								
Acupuncture								
Acupuncture vs	Cheing et al. (2008)	\leftrightarrow 4w, 12w, 6m	-	↔ 4w, 12w, 6m	-	-	-	-
physiotherapy								
	Ma et al. (2006)	↓ 4w	-	-	\leftrightarrow 4w	\leftrightarrow 4w	↔ 4w	-
Acupuncture vs sham	Cheing et al. (2008)	↓ 4w	-	↑ 4w	-	-	-	-
acupuncture/no								
treatment								
	Schroder et al. (2017)	↓(post session)	-	\leftrightarrow (post session)	-	-	-	-
	Sun et al. (2001)	-	-	个 6w, 5m	-	-	-	-

ACR, arthroscopic capsular release; ESWT, extracorporeal shock wave therapy; IA, intra-articular; m, months; MUA, manipulation under anaesthesia; PO, per oral; SA, subacromial; w; weeks

Comparison	Outcome measure	Number of studies	Overall risk of bias	Inconsistency	Indirectness	Imprecision	Other	Strength of Evidence
Arthrographic distension + IA Corticosteroid vs IA Corticosteroid only	Pain	4 EST 5 LST	Low	Low	Low	Low	Low	High EST High LST
	Functional Disability	3 EST 4 LST	Low	High EST Low LST	Low	Low	Low	Mod EST High LST
	ROM ER	3 EST 5 LST	Low	Low	Low	Low	Low	High EST High LST
Physiotherapy vs no treatment/placebo	ROM ER	4 EST	Low	Low	Low	High	Low	Mod EST
IA Corticosteroid vs IA Placebo/No treatment	Pain	11 EST 10 LST 7 MT	Low EST Low LST High MT	Low EST High LST Low MT	Low	Low	Low (Funnel plots for EST and LST)	High EST Mod LST Mod MT
	Functional Disability	9 EST 8 LST 5 MT	Low EST Low LST High MT	High EST High LST Low MT	Low	Low		Mod EST Mod LST Mod MT

eTable 4. Results of Grading of the Certainty of Evidence According to the GRADE Tool for Each Comparison of Interventions

	ROM ER	11 EST	Low EST	Low	Low	Low	Low	High EST
Comparison	Outcome measure	Number of studies	Overall risk of bias	Inconsistency	Indirectness	Imprecision	Other	Strength of Evidence
		11 LST 7 MT	Low LST High MT				(Funnel plots for EST and LST)	High LST Mod MT
IA Corticosteroid + Physiotherapy vs IA Placebo/no treatment	ER ROM	3 EST	Low	Low	Low	Low	Low	High EST
	Pain	7 EST 4 LST 5 MT	High EST Low LST High MT	Low EST Low LST High MT	Low	Low	Low	MOD EST High LST LOW MT
IA Corticosteroid vs Physiotherapy	Functional Disability	5 EST 3 LST 4 MT	High EST Low LST High MT	Low EST High LST Low MT	Low	Low	Low	MOD EST MOD LST MOD MT
	ROM ER	6 EST 4 LST 4 MT	Low EST Low LST High MT	High EST Low LST Low MT	Low	Low	Low	MOD EST HIGH LST MOD MT

Comparison	Outcome measure	Number of studies	Overall risk of bias	Inconsistency	Indirectness	Imprecision	Other	Strength of Evidence
	Pain	4 EST 5 MT	High	Low	Low	Low	Low	MOD EST MOD MT
IA Corticosteroid + Physiotherapy vs IA Corticosteroid only	Functional Disability	4 EST 4 MT	High EST Low MT	Low	Low	High EST Low MT	Low	LOW EST HIGH MT
	ROM ER	4 EST 4 MT	Low	High EST Low MT	Low	Low	Low	MOD EST HIGH MT
	Pain	4 EST 4 MT	High	Low	Low		Low	MOD EST MOD MT
IA Corticosteroid + Physiotherapy vs Physiotherapy only	Functional Disability	3 EST 3 MT	High	Low	Low	High	Low	LOW EST
	ROM ER	4 EST 3 MT	High EST Low MT	Low	Low	Low	Low	MOD EST HIGH MT
IA Corticosteroid vs SA Corticosteroid	Pain	6 EST 7 LST	Low EST High LST	High EST Low LST	Low	Low	Low	MOD EST MOD LST

		3 MT	Low MT	High MT				MOD MT
Comparison	Outcome measure	Number of studies	Overall risk of bias	Inconsistency	Indirectness	Imprecision	Other	Strength of Evidence
IA Corticosteroid vs	Function	5 EST 6 LST	Low	Low	Low	Low	Low	HIGH EST HIGH LST
SA Corticosteroid	ROM ER	5 EST 6 LST 3 MT	Low	Low	Low	Low	Low	HIGH EST HIGH LST HIGH MT
Acupuncture +	Pain	3 EST	High	Low	Low	High	Low	LOW EST
Physiotherapy vs Physiotherapy only (+/- placebo)	ROM ER	3 EST	Low	Low	Low	Low	Low	HIGH EST
ESWT + Physiotherapy vs Physiotherapy only (+/- sham ESWT)	Pain	3 EST	High	Too high	Low	High	Low	Meta-analysis abandoned

Each outcome measure and each follow up time period graded separately

ER ROM, external rotation range of movement; EST, early short-term (2-6 weeks); ESWT, extracorporeal shock wave therapy; IA, intra-articular; LST, late short-term (8-12 weeks); MT, mid-term (4-6 months); SA, subacromial.

Comparison	Outcome Measure	Follow up time period	l ²	Study removed after sensitivity analysis	l ²
		Early short-term	46%	-	-
	Pain	Late short-term	80%	Rizk et al. (1991)	72%
		Mid-term	72%	Prestgaard et al. (2015)	48%
IA Corticosteroid vs No Treatment/Placebo		Early short-term	83%	Ranalletta et al (2015)	64%
	Function	Late short-term	81%	Ranalletta et al (2015)	52%
		Mid-term	0%	-	-
		Early short-term	20%	-	-
	ER ROM	Late short-term	53%	Ranalletta et al (2015)	48%
		Mid-term	31%	-	-
Physiotherapy vs No Treatment/Placebo	ER ROM	Early short-term	95%	Carette et al. (2003)	47%
IA Corticosteroid + Physiotherapy vs No Treatment/Placebo	ER ROM	Early short-term	0%	-	-
		Early short-term	56%	Van der Windt et al. (1998)	23%
IA Corticosteroid vs Physiotherapy	Pain	Late short-term	22%	-	-
		Mid-term	66%	-	-

eTable 5. Results of Statistical Inconsistency Assessment for Each Pairwise Meta-analysis

	Function	Early short-term	66%	Calis et al. (2006)	0%
Comparison	Outcome Measure	Follow up time period	l ²	Study removed after sensitivity analysis	l ²
	Function	Late short-term	65%	-	-
		Mid-term	17%	-	-
IA Corticosteroid vs Physiotherapy		Early short-term	73%	-	-
	ER ROM	Late short-term	61%	Bulgen et al. (1984)	0%
		Mid-term	0%	-	-
	Pain	Early short-term	77%	Kraal et al. (2018)	0%
		Mid-term	1%	-	-
IA Corticosteroid + Physiotherapy vs IA	Function	Early short-term	77%	Kraal et al. (2018)	0%
Corticosteroid		Mid-term	0%	-	-
	ER ROM	Early short-term	87%	Maryam et al. (2012)	52%
		Mid-term	45%	-	-
	Pain	Early short-term	76%	Carette et al. (2003)	0%
Physiotherapy VS		Mid-term	23%	-	-
	Function	Early short-term	7%	-	-

		Mid-term	2%	-	-
Comparison	Outcome Measure	Follow up time period	l ²	Study removed after sensitivity analysis	l ²
IA Corticosteroid + Physiotherapy vs	ER ROM	Early short-term	53%	Carette et al. (2003)	0%
Physiotherapy		Mid-term	92%	-	-
		Early short-term	95%	Cho et al. (2016)	60%
	Pain	Late short-term	52%	Cho et al. (2016)	22%
	-	Mid-term	78%	-	-
IA Corticosteroid vs SA Corticosteroid	Function	Early short-term	70%	Cho et al. (2016)	0%
		Late short-term	57%	Cho et al. (2016)	43%
		Early short-term	42%	-	-
	ER ROM	Late short-term	67%	Sun et al. (2018)	43%
	-	Mid-term	28%	-	-
	Pain	Early short-term	0%	-	-
Arthrographic Distension + IA		Late short-term	51%	Gam et al. (1998)	0%
Corticosteroid vs IA Corticosteroid	Function	Early short-term	61%	-	-
		Late short-term	0%	-	-

	ER ROM	Early short-term	18%	-	-
Comparison	Outcome Measure	Follow up time period	l ²	Study removed after sensitivity analysis	l ²
Arthrographic Distension + IA Corticosteroid vs IA Corticosteroid	ER ROM	Late short-term	85%	Reza et al. (2015)	0%
Acupuncture + Physiotherapy vs	Pain	Early short-term	0%	-	-
Physiotherapy	ER ROM	Early short-term	0%	-	-
ESWT + Physiotherapy vs Physiotherapy only (+/- sham ESWT)	Pain	Early short-term	93%*	-	-

Where the l² statistic was greater than 50% and there were at least four studies in the meta-analysis, sensitivity analyses were conducted to identify and remove a single study which was responsible for the high heterogeneity and the test was re-performed. *ER ROM, external rotation range of movement*

*Sensitivity analysis not performed as only three studies in meta-analysi

eFigure 1. Results of Pairwise Meta-analyses with Respective Mean Differences for Early Shortterm Outcomes

Early short-term results (2-6 weeks)

a) IA Corticosteroid vs No Treatment/Placebo

Pain

	IA Con	ticosteroid	oid No treatment/Placebo					Mean Difference	Mean Difference			
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]			
Bal et al. (2008)	-4.8	3.5	42	-2	3.9	40	6.0%	-2.80 [-4.41, -1.19]				
Calls et al. (2006)	-1.2	1.9	25	-0.8	2.2	20	8.9%	-0.40 [-1.62, 0.82]				
Carette et al. (2003)	-3.9	2.8	25	-1.7	2.7	23	6.3%	-2.20 [-3.76, -0.64]				
Dehghan et al. (2013)	-3.3	2.2	29	-2.5	2.3	28	9.4%	-0.80 [-1.97, 0.37]				
Prestgaard et al. (2015)	-2.9	1.8	42	-1.5	1.8	40	14.5%	-1.40 [-2.18, -0.62]				
Ranalletta et al. (2015)	-5.3	0.6	37	-3.8	0.9	37	22.2%	-1.50 [-1.85, -1.15]				
Rizk et al. (1991)	0	1.9	16	-0.2	2.2	16	7.2%	0.20 [-1.22, 1.62]				
Roh et al. (2012)	-1.2	2.7	25	-0.3	2.7	25	6.7%	-0.90 [-2.40, 0.60]				
Ryans et al. (2005)	-1	1.9	20	-0.5	2.8	20	6.8%	-0.50 [-1.98, 0.98]				
Sharma et al. (2016)	-3.1	1.8	36	-1	2.3	36	11.9%	-2.10 [-3.05, -1.15]				
Shin & Lee (2013)	-5.5	1.9	48	-2.3	1.2	49	0.0%	-3.20 [-3.83, -2.57]				
Total (95% CI)			297			285	100.0%	-1.28 [-1.74, -0.83]	•			
Heterogeneity: Tau ² = 0.1	21; Chr ² = 16.	61, df = 9	(P = 0.0		-4 -2 0 2 4							
lest for overall effect. 2 -	5.58 (P < 0.1	00001)							Favours IA Corticosteroid Favours No treatment/Placebo			

ER ROM

EK KUM									
	IA Cort	ticosteroid		No Treat	ment/Placebo			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Bal et al. (2008)	-25	38.1	42	-10	8.1	24	2.7%	-15.00 [-26.97, -3.03]	
Calis et al. (2006)	-7.5	11.5	25	-7	9.2	20	9.0%	-0.50 [-6.55, 5.55]	
Carette et al. (2003)	-18.3	16.3	25	-7.1	16.3	23	4.3%	-11.20 [-20.43, -1.97]	
Dehghan et al. (2013)	-11.4	11.7	29	-9.4	8.9	28	10.8%	-2.00 [-7.39, 3.39]	
Prestgaard et al. (2015)	-13.7	11.8	42	-7	11.7	40	11.6%	-6.70 [-11.79, -1.61]	
Ranalletta et al. (2015)	-16.8	7.5	36	-13.7	7.5	38	19.9%	-3.10 [-6.52, 0.32]	
Rizk et al. (1991)	-0.5	12.6	16	-0.8	12	16	5.0%	0.30 [-8.23, 8.63]	
Roh et al. (2012)	-4	9	25	-1	9	25	12.1%	-3.00 [-7.99, 1.99]	
Ryans et al. (2005)	-14.3	15.2	20	-6.6	13.2	20	4.7%	-7.70 [-16.52, 1.12]	
Sharma et al. (2016)	-10.5	15.5	36	-1.5	14.1	36	7.3%	-9.00 [-15.84, -2.16]	
Shin & Lee (2013)	-14	12.6	48	-10	12	49	12.4%	-4.00 [-8.90, 0.90]	
Total (95% CI)			344			319	100.0%	-4.42 [-6.44, -2.40]	•
Heterogeneity: Tau ² = 2.2	8; Chi ² = 12.53, 4	df = 10 (P = 0.	25); ۲ -	- 20%					-20 -10 0 10 20
Test for overall effect: Z =	4.29 (P < 0.000)	1)							Favours IA Corticosteroid Favours No Treatment/Placebo

b) Physiotherapy vs No Treatment/Placebo

ER ROM

	Physic	otherapy		No Treat	ment/Placebo			Mean Difference	Mean Difference			
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]		IV, Random, 9	5% CI [degrees]	
Bulgen et al. (1984)	-15	3.2	11	-4	3.4	8	37.9%	-11.00 [-14.02, -7.98]		<u> </u>		
Calls et al. (2006)	-13.8	11.2	21	-7	9.2	20	14.6%	-6.80 [-13.06, -0.54]				
Carette et al. (2003)	-9.6	3.2	27	-7.1	3.4	23	0.0%	-2.50 [-4.34, -0.66]				
Lee et al. (1974)	-14	3.2	17	-1	3.4	15	47.4%	-13.00 [-15.30, -10.70]				
Total (95% CI)			49			43	100.0%	-11.33 [-14.03, -8.63]	-			
Heterogeneity: Tau ⁺ = Test for overall effect:	2.63; Chi ^e = 3.77 z = 8.23 (P < 0.0	, df = 2 (P = 0 0001)	.15); ř	= 47%					-20 -	-10 urs Physiotherapy	0 10 Favours No Treatment/Placebo	20

c) IA Corticosteroid + Physiotherapy vs No Treatment/Placebo

ER ROM

	IA Corticosteroid + Physiotherapy			No treatment/Placebo				Mean Difference		Mean Difference			
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degree:	1	IV, Random, 9	5% CI [degree	s]	
Carette et al. (2003)	-26.5	16.9	22	-7.1	17.7	27	35.3%	-19.40 [-29.12, -9.6]	8]				
Lee et al. (1974)	-22	16.7	15	-1	15.5	17	26.5%	-21.00 [-32.21, -9.75	a) + • •		1		
Ryans et al. (2005)	-21	16.5	20	-6.6	13.2	19	38.1%	-14.40 [-23.76, -5.04	I)				
Total (95% CI)			57			63	100.0%	-17.92 [-23.69, -12.14		-			
Heterogeneity: Tau ² = 0.00; Ch ² = 0.92; df = 2 (P = 0.63); P = 0%											20		
lest for overall effect.	2 = 0.08 (P < 0.0	0001)							Favours IA Corticosteroi	d + Physiotherapy	Favours No T	reatment	

d) IA Corticosteroid vs Physiotherapy

Pain

	IA Cort	icosteroid		Physic	otherapy			Mean Difference	
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Arslan et al. (2001)	-3.6	1.3	10	-3.8	1	10	32.6%	0.20 [-0.82, 1.22]	
Calis et al. (2006)	-1.2	3.3	25	-1.4	3.7	21	12.0%	0.20 [-1.84, 2.24]	
Carette et al. (2003)	-3.9	2.8	25	-2.2	2.8	27	19.2%	-1.70 [-3.22, -0.18]	
Dacre et al. (1989)	-4.5	7	22	-4.5	7	22	3.4%	0.00 [-4.14, 4.14]	
Maryam et al. (2012)	-1.3	4	29	-2	1.2	29	19.3%	0.70 [-0.82, 2.22]	
Ryans et al. (2005)	-1	1.9	20	-1.8	3.9	20	13.6%	0.80 [-1.10, 2.70]	
van der Windt et al. (1998)	-3.2	2.6	52	-1.7	2.1	56	0.0%	-1.50 [-2.40, -0.60]	
Total (95% CI)			131			129	100.0%	0.01 [-0.77, 0.78]	•
Heterogeneity: Tau ² = 0.21; Test for overall effect: 7 = 0	$Chl^2 = 6.46, c$	-4 -2 0 2 4							
rest ion overall enect. Z = 0.	VA (F = 0.99)								Favours IA Corticosteroid Favours Physiotherapy

ER ROM

	IA Corticosteroid Physiotherapy							Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Arslan et al. (2001)	-13	14.1	10	-13.2	11.8	10	11.3%	0.20 [-11.20, 11.60]	
Bulgen et al. (1984)	-8	14.1	11	-15	11.8	11	11.8%	7.00 [-3.87, 17.87]	
Calls et al. (2006)	-7.5	11.5	25	-13.8	11.2	21	16.1%	6.30 [-0.28, 12.88]	
Carette et al. (2003)	-18.3	16.3	25	-9.6	15.3	27	14.0%	-8.70 [-17.31, -0.09]	
Maryam et al. (2012)	-9.8	10.7	31	-1.6	16.9	27	15.3%	-8.20 [-15.60, -0.80]	
Ryans et al. (2005)	-14.3	15.2	20	-16.7	13.2	20	13.8%	2.40 [-6.42, 11.22]	
van der Windt et al. (1998)	-6	14	52	3	12	56	17.8%	-9.00 [-13.94, -4.06]	
Total (95% CI)			174			172	100.0%	-1.88 [-7.58, 3.82]	
Heterogeneity: $Tau^2 = 41.15$; $Chl^2 = 21.91$, $df = 6$ (P = 0.001); $l^2 = 73\%$ Test for overall effect: Z = 0.65 (P = 0.52)									-20 -10 0 10 20 Favours IA Corticosteroid Favours Physiotherapy

e) IA Corticosteroid + Physiotherapy vs IA Corticosteroid only

Pain

	IA Corticoste	roid + Physioth	nerapy	IA Cort	ticosteroid			Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Fixed, 95% CI [VAS]	IV, Fixed, 95% CI [VAS]
Carette et al. (2003)	-4.9	2.8	22	-3.9	2.8	25	13.2%	-1.00 [-2.60, 0.60]	
Dacre et al. (1989)	-4.5	7	22	-4.5	7	22	2.0%	0.00 [-4.14, 4.14]	
Kraal et al. (2018)	-6.8	3	11	-1.1	2.8	10	0.0%	-5.70 [-8.18, -3.22]	
Maryam et al. (2012)	-1.6	1.4	30	-1.3	1.4	30	67.7%	-0.30 [-1.01, 0.41]	
Ryans et al. (2005)	-1.6	2.6	20	-1	1.9	20	17.1%	-0.60 [-2.01, 0.81]	
Total (95% CI)		0.000.02	94			97	100.0%	-0.44 [-1.02, 0.15]	
Heterogeneny: Chr = C	./1, df = 3 (P	0.87); F = 0%							-4 -2 0 2 4
lest for overall effect.	L = 1.47 (P = 0.	14)							Favours IA Corticosteroid + Physiotherapy Favours IA Corticosteroid only

ER ROM

	IA Corticost	eroid+Physiothe	erapy	IA Cortic	osteroid only			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Carette et al. (2003)	-26.5	16.9	22	-18.3	16.3	25	32.7%	-8.20 [-17.72, 1.32]	
Kraal et al. (2018)	-32	13.7	11	-13	5.2	10	35.5X	-19.00 [-27.71, -10.29]	
Maryam et al. (2012)	-3.8	12.3	29	-9.8	10.7	31	0.0%	6.00 [0.15, 11.85]	
Ryans et al. (2005)	-21	16.5	20	-14.3	15.2	20	31.7%	-6.70 [-16.53, 3.13]	
Total (95% CI) Heterogeneity: Tau ² = 2 Test for overall effect: 2	25.06; Ch ^µ = 4.20 : = 2.90 (P = 0.00	0, df = 2 (P = 0.))4)	53 12); ۴ = 525	ĸ		55	100.0%	-11.56 [-19.39, -3.74]	-20 -10 0 10 20 Favours IA Corticosteroid Physiotherapy Favours IA Corticosteroid only

f) IA Corticosteroid + Physiotherapy vs Physiotherapy only

Pain

	IA Corticoter	roid + Physioth	herapy	Physiot	herapy onl	Y		Mean Difference	Mean D	Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random	, 95% CI [VAS]
Carette et al. (2003)	-4.9	2.8	22	-2.2	2.8	27	0.0%	-2.70 [-4.28, -1.12]		
Dacre et al. (1989)	-4.5	7	22	-4.5	7	22	2.4%	0.00 [-4.14, 4.14]		
Maryam et al. (2012)	-1.6	1.4	28	-2	1.2	28	87.9%	0.40 [-0.28, 1.08]	-	+
Ryans et al. (2005)	-1.6	2.6	20	-1.8	3.9	20	9.7%	0.20 [-1.85, 2.25]		·
Total (95% CI)			70			70	100.0%	0.37 [-0.27, 1.01]		•
Heterogeneity: Tau ² = 1	$0.00; Chl^2 = 0.0$	06, df = 2 (P =	0.97); 🖻 -	- 0%					-4 -2	0 2 4
lest for overall effect:							Favours IA Corticoteroid + Physiotherapy	Favours Physiotherapy only		

ER ROM

	Acupunctur	e + Physiotherapy	1	Physiot	herapy only			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Koh et al. (2013)	-9.7	11	23	-8.8	13.6	23	59.9X	-0.90 [-8.05, 6.25]	
Lo et al. (2020)	-15	21	11	-20	20	10	10.0%	5.00 [-12.54, 22.54]	
Ma et al. (2006)	-10.4	16	15	-8.9	16.8	30	30.1X	-1.50 [-11.58, 8.58]	
Total (95% CI) Heterogeneity: Tau ² = Test for overall effect:	0.00; Chi ² = 0.43 Z = 0.17 (P = 0.8	, df = 2 (P = 0.81) 6)	49); ř = 0 ;	ĸ		63	100.0%	-0.49 [-6.03, 5.04]	-20 -10 0 10 20 Favours Acupuncture + Physiotherapy Favours Physiotherapy only

g) IA Corticosteroid vs SA Corticosteroid

Pain

	IA Cort	ticosteroid		SA Cor	ticosteroid			Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Fixed, 95% CI [VAS]	IV, Fixed, 95% CI [VAS]
Cho et al. (2016)	-8.1	1.4	42	-3.2	1.7	42	0.0%	-4.90 [-5.57, -4.23]	
Oh et al. (2011)	-3.6	2.6	37	-3.6	2.5	34	19.8%	-0.20 [-1.39, 0.99]	
Rizk et al. (1991)	0	2.3	16	0	2.5	16	10.1%	0.00 [-1.66, 1.66]	
Shin & Lee (2013)	-5.5	2.3	48	-4.3	2.5	49	30.6%	-1.20 [-2.16, -0.24]	
Sun et al. (2018)	-2.3	3.4	32	-0.2	3.4	32	10.1%	-2.10 [-3.77, -0.43]	
Yoon et al. (2016)	-1	1.6	30	-1.2	2.2	30	29.5%	0.20 [-0.77, 1.17]	
Total (95% CI)			163			161	100.0%	-0.56 [-1.09, -0.03]	•
Heterogeneity: Chi ² =	8.14, df = 4	(P = 0.09);	r ² = 51	*					-4 -2 0 2 4
rest for overall enect.	0.04/							Favours IA Corticosteroid Favours SA Corticosteroid	

ER ROM

	IA Cort	icosteroid		SA Cor	ticosteroid			Mean Difference	
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Cho et al. (2016)	-30.2	13.3	42	-21	13.4	42	25.3%	-9.20 [-14.91, -3.49]	
Oh et al. (2011)	-20	23.7	37	-17	23.7	34	11.6%	-3.00 [-14.04, 8.04]	
Rizk et al. (1991)	-0.5	21.8	16	-1	18.6	16	8.0%	0.50 [-13.54, 14.54]	
Shin & Lee (2013)	-14	21.8	48	-10	18.6	49	17.7%	-4.00 [-12.07, 4.07]	
Sun et al. (2018)	-15.9	41.9	32	-1.1	29.4	32	5.4%	-14.80 [-32.53, 2.93]	·
Yoon et al. (2016)	-10	8	30	-10	8	30	32.1%	0.00 [-4.05, 4.05]	
Total (95% CI)			205			203	100.0%	-4.13 [-8.51, 0.24]	-
Heterogeneity: Tau ² - Test for overall effect:	11.23; Ch ² = 8. z = 1.85 (P = 0.0	58, df = 5 (P =)6)	0.13);	² = 42%				-20 -10 0 10 20	

h) IA Corticosteroid + Arthrographic Distension vs IA Corticosteroid only

Pain

	IA Corticos	teroid + Diste	nsion	IA Cort	icosteroid			Mean Difference	Mean Difference		
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]		
Gam et al. (1998)	0.5	2.8	12	0	3.6	6	1.6%	0.50 [-2.46, 3.46]			
Lee et al. (2017a)	-4.7	1.6	32	-3.8	1.6	32	25.6%	-0.90 [-1.68, -0.12]			
Park & Hwnag (2000)	-6.4	1.5	28	-5.6	1.7	27	21.9%	-0.80 [-1.65, 0.05]			
Sharma et al. (2016)	-3.7	1.7	35	-3.1	1.8	35	23.4%	-0.60 [-1.42, 0.22]			
Yoon et al. (2016)	-2.2	1.4	30	-1	1.6	30	27.2%	-1.20 [-1.96, -0.44]			
Total (95% CI)	a landar waardah ka s		137			132	100.0%	-0.86 [-1.26, -0.47]	◆		
Heterogeneity: Tau ² = (0.00; Cht ² = 2.	00, df = 4 (P =	• 0.74); ř	- 0%							
Test for overall effect: 2	= 4.27 (P < 0	.0001)							Favours IA Corticosteroid + Distension Favours IA Corticosteroid		

ER ROM

	IA Corticost	eroid + Distensi	on	IA Cortic	osteroid only			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Lee et al. (2017a)	-17	15.8	32	-15	13.1	32	22.1%	-2.00 [-9.11, 5.11]	
Park & Hwnag (2000)	-25.7	19.9	28	-25.1	15.9	27	13.4%	-0.60 [-10.10, 8.90]	
Sharma et al. (2016)	-10.4	16.8	35	-10.5	15.5	35	19.9%	0.10 [-7.47, 7.67]	
Yoon et al. (2016)	-17	9.5	30	-10	8	30	44.7%	-7.00 [-11.44, -2.56]	
Total (95% CI)			125			124	100.0%	-3.63 [-7.30, 0.04]	•
Heterogeneity: Tau ² = 2	2.70; Chl" = 3.67,	df = 3 (P = 0.30)	; F = 18%						-20 -10 0 10 20
rest for overall effect. A	- 1.94 (r - 0.03	,							Favours IA Corticosteroid + Distension Favours IA Corticosteroid only

i) Acupuncture + Physiotherapy vs Physiotherapy only (+/- sham acupuncture)

Pain

	Acupunctur	re + Physiothe	erapy	Physiot	herapy onl	У		Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Koh et al. (2013)	-2.1	1.7	23	-1.6	1.6	23	45.6%	-0.50 [-1.45, 0.45]	
Lo et al. (2020)	-2.8	1.9	11	-3.5	1.6	10	18.6%	0.70 [-0.80, 2.20]	
Ma et al. (2006)	-1.9	1.8	15	-1.4	1.6	30	35.9%	-0.50 [-1.58, 0.58]	
Total (95% CI)			49			63	100.0%	-0.28 [-0.92, 0.37]	-
Heterogeneity: Tau ² Test for overall effect	= 0.00; Chl ² = 2 ; Z = 0.84 (P =	2.01, df = 2 (F 0.40)	P = 0.37);	12 = 0%					-4 -2 0 2 4 Favours Acupuncture + Physiotherapy Favours Physiotherapy only

	Acupunctur	e + Physiothe	erapy	Physiot	herapy only	Y		Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Koh et al. (2013)	-2.1	1.7	23	-1.6	1.6	23	45.6%	-0.50 [-1.45, 0.45]	
Lo et al. (2020)	-2.8	1.9	11	-3.5	1.6	10	18.6%	0.70 [-0.80, 2.20]	
Ma et al. (2006)	-1.9	1.8	15	-1.4	1.6	30	35.9%	-0.50 [-1.58, 0.58]	
Total (95% CI)			49			63	100.0%	-0.28 [-0.92, 0.37]	-
Heterogeneity: Tau ² Test for overall effect	= 0.00; Chl ² = 2 ; Z = 0.84 (P =	2.01, df = 2 (P 0.40)	· = 0.37);	r = 0%					Favours Acupuncture + Physiotherapy Favours Physiotherapy only

eFigure 2. Results of Pairwise Meta-analyses With Respective Mean Differences for Late Short-term Outcomes

Late short-term results (8-12 weeks)

a) IA Corticosteroid vs No Treatment/Placebo

Pain

	IA Cort	IA Corticosteroid No treatme						Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Bal et al. (2008)	-7	1.4	40	-5.7	1.5	40	12.7%	-1.30 [-1.94, -0.66]	
Calls et al. (2006)	-2.9	1.4	26	-1.9	1.5	22	11.0%	-1.00 [-1.83, -0.17]	
Carette et al. (2003)	-4.8	1.5	25	-3	1.4	23	11.1%	-1.80 [-2.62, -0.98]	
Dehghan et al. (2013)	-3.4	2.4	29	-2.9	2.4	28	7.8%	-0.50 [-1.75, 0.75]	
Prestgaard et al. (2015)	-3.9	1.8	42	-2.7	1.8	40	11.4%	-1.20 [-1.98, -0.42]	
Ranalletta et al. (2015)	-6.4	1.1	38	-6.5	1.1	36	13.8%	0.10 [-0.40, 0.60]	
Rizk et al. (1991)	-0.5	1.4	16	-1.8	1.5	15	0.0%	1.30 [0.28, 2.32]	
Roh et al. (2012)	-1.7	2	25	-1.2	2	25	8.8%	-0.50 [-1.61, 0.61]	
Sharma et al. (2016)	-3.9	1.9	36	-1.9	2.1	36	10.2%	-2.00 [-2.93, -1.07]	
Shin & Lee (2013)	-4.7	1.4	48	-3.6	1.5	49	13.2%	-1.10 [-1.68, -0.52]	
Total (95% CI)			309			299	100.0%	-1.03 [-1.52, -0.54]	◆
Heterogeneity: Tau ² = 0.3	8; Chi ² = 28.	82, df = 8	(P = 0.0		4 -2 0 2 4				
est for overall effect: 2 =	4.15 (P < 0.0	0001)							Favours IA Corticosteroid Favours No treatment/Placebo

ER ROM

EK KOM									
	IA Con	ticosteroid		No Treat	tment/Placebo			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Bal et al. (2008)	-40	37.1	40	-30	41.4	40	3.0%	-10.00 [-27.23, 7.23]	
Bulgen et al. (1984)	-7	13.1	11	-7	13.4	8	5.4%	0.00 [-12.09, 12.09]	
Calis et al. (2006)	-15.7	12.9	26	-9.3	12.1	20	10.6%	-6.40 [-13.66, 0.86]	
Carette et al. (2003)	-25.5	17	25	-13.4	17	23	7.5%	-12.10 [-21.73, -2.47]	
Dehghan et al. (2013)	-14	12	29	-13	9.7	28	13.4%	-1.00 [-6.66, 4.66]	
Prestgaard et al. (2015)	-20.6	13.6	42	-8.1	15.3	40	12.2%	-12.50 [-18.78, -6.22]	
Ranalletta et al. (2015)	-21.9	10.3	36	-21.6	10.5	38	0.0%	-0.30 [-5.04, 4.44]	
Rizk et al. (1991)	-1.3	13.1	16	-3	13.4	16	8.0%	1.70 [-7.48, 10.88]	
Roh et al. (2012)	-5	8.5	25	-2.5	8.5	25	15.3%	-2.50 [-7.21, 2.21]	
Sharma et al. (2016)	-18.6	16.2	36	-6.7	15.9	36	10.3%	-11.90 [-19.31, -4.49]	
Shin & Lee (2013)	-27	13.1	48	-20	13.4	49	14.2%	-7.00 [-12.27, -1.73]	- <u>-</u>
Total (95% CI)			298			285	100.0%	-6.02 [-9.25, -2.80]	•
Heterogeneity: Tau ² = 11 Test for overall effect: Z =	.88; Chi ² = 17.17	df = 9 (P = 0.	05); P	- 48%					-20 -10 0 10 20
test ist steral cheet.									Favours IA Corticosteroid Favours No Treatment/Placebo

b) IA Corticosteroid vs Physiotherapy

Pain

	IA Cort	icosteroid		Physic	otherapy			Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Arslan et al. (2001)	-6.1	1.1	10	-5.9	1.8	10	18.4%	-0.20 [-1.51, 1.11]	
Calls et al. (2006)	-2.9	1.8	26	-1.6	2.2	22	22.7%	-1.30 [-2.45, -0.15]	
Carette et al. (2003)	-4.8	1.5	25	-3.8	1.6	27	36.0%	-1.00 [-1.84, -0.16]	_
van der Windt et al. (1998)	-6.6	2.8	53	-4.7	3.3	56	22.8%	-1.90 [-3.05, -0.75]	_
Total (95% CI)			114			115	100.0%	-1.13 [-1.74, -0.51]	•
Heterogeneity: $Tau^2 = 0.09$; Test for overall effect: $Z = 3$.	Chl ² = 3.85, (59 (P = 0.000	df = 3 (P =)3)	0.28);	i ² = 22%					-4 -2 0 2 4 Favours IA Corticosteroid Favours Physiotherapy

ER ROM

	IA Cort	licosteroid		Physic	otherapy			Mean Difference	Mean Difference		
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees] SD [degrees] Tota		Total	Weight IV, Random, 95% CI [degrees]		IV, Random, 95% CI [degrees]		
Arslan et al. (2001)	-29.1	14.4	10	-28.9	12.3	10	14.6%	-0.20 [-11.94, 11.54]			
Bulgen et al. (1984)	-7	14.4	11	-17	12.3	11	0.0%	10.00 [-1.19, 21.19]			
Calls et al. (2006)	-15.7	11.7	26	-9.3	8.6	22	60.6%	-6.40 [-12.16, -0.64]			
Carette et al. (2003)	-25.5	17	25	-18	16	27	24.8%	-7.50 [-16.49, 1.49]			
Total (95% CI) Heterogeneity: Tau ² = Test for overall effect:	0.00; Chi ² = 1.05 Z = 2.52 (P = 0.0	, df = 2 (P = 0 1)	61 .59); f ²	- 0%		59	100.0%	-5.77 [-10.25, -1.29]	-20 -10 0 10 20 Favours IA Corticosteroid Favours Physiotherapy		

c) IA Corticosteroid vs SA Corticosteroid

Pain									
	IA Cort	icosteroid		SA Cor	ticosteroid	L		Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Cho et al. (2016)	-5.7	1.7	42	-4.6	1.5	42	0.0%	-1.10 [-1.79, -0.41]	
Khallaf et al. (2018)	-8.6	0.6	20	-8.3	0.7	20	43.1%	-0.30 [-0.70, 0.10]	
Oh et al. (2011)	-4.5	2.5	37	-3.8	2.3	34	11.6%	-0.70 [-1.82, 0.42]	
Rizk et al. (1991)	-0.5	2	16	-0.7	2.1	16	7.7%	0.20 [-1.22, 1.62]	
Shin & Lee (2013)	-4.7	2	48	-5.3	2.1	49	19.1%	0.60 [-0.22, 1.42]	
Sun et al. (2018)	-2.9	3.4	30	-1.8	4	34	4.9%	-1.10 [-2.91, 0.71]	
Yoon et al. (2016)	-1.2	1.8	30	-1.4	2.2	30	13.6%	0.20 [-0.82, 1.22]	
Total (95% CI)			181			183	100.0%	-0.11 [-0.52, 0.31]	•
Heterogeneity: Tau ² =	0.06; Chl ² = 1	6.45, df =	5 (P =	0.26); 12 = 22	2%				-4 -2 0 2 4
rest for overall effect:	z = 0.31 (P =	0.01)							Favours IA Corticosteroid Favours SA Corticosteroid

ER ROM

	IA Cort	IA Corticosteroid SA Corticostero						Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Cho et al. (2016)	-30	13.7	42	-22.1	14	42	28.3%	-7.90 [-13.82, -1.98]	
Oh et al. (2011)	-20	30.5	37	-18	30.5	34	9.1%	-2.00 [-16.20, 12.20]	
Rizk et al. (1991)	-1.3	23.5	16	-6.6	21.9	16	7.7%	5.30 [-10.44, 21.04]	
Shin & Lee (2013)	-27	23.5	48	-19	21.9	49	17.8%	-8.00 [-17.04, 1.04]	
Sun et al. (2018)	-25.1	43	32	5	31.1	32	0.0%	-30.10 [-48.49, -11.71]	
Yoon et al. (2016)	-20	8	30	-20	6	30	37.1%	0.00 [-4.05, 4.05]	-+-
Total (95% CI)			173			171	100.0%	-3.44 [-8.16, 1.29]	•
Heterogeneity: Tau ² = Test for overall effect:	Heterogeneity: Tau ² = 11.41; Ch ² = 6.98, df = 4 (P = 0.14); i ² = 43% Test for overall effect Z = 1.42 (P = 0.15)							-	-20 -10 0 10 20 Favours IA Corticosteroid Favours SA Corticosteroid

d) IA Corticosteroid + Arthrographic Distension vs IA Corticosteroid only

Pain

	Arthrographic Dis	graphic Distension + IA Corticosteroid			osteroid on	ly		Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Gam et al. (1998)	-2	1.6	11	-3	1.6	11	0.0%	1.00 [-0.34, 2.34]	
Lee et al. (2017a)	-5	1.7	32	-4.3	1.6	32	14.1%	-0.70 [-1.51, 0.11]	
Reza et al. (2013)	-4.7	0.7	50	-3.9	1.2	50	62.1%	-0.80 [-1.19, -0.41]	
Sharma et al. (2016)	-4.3	2.3	35	-3.9	1.6	35	10.7%	-0.40 [-1.33, 0.53]	
Yoon et al. (2016)	-2.4	1.5	30	-1.2	1.8	30	13.1%	-1.20 [-2.04, -0.36]	
Total (95% CI)			147			147	100.0%	-0.80 [-1.10, -0.49]	
Heterogeneity: Tau" = 1	Heterogeneity: Tau" = 0.00; Ch" = 1.65, df = 3 (P = 0.65); $P = 0.05$								-2 -1 0 1 2
lest for overall effect: $Z = 5.14 \ (P < 0.00001)$								Fav	ours Arthrographic Distension + IA Corticosteroid Favours IA Corticosteroid only

Favours Arthrographic Distension + IA Corticosteroid Favours IA Corticosteroid only

	IA Corticos	teroid+Distension	ı	IA Cortie	costeroid only			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Lee et al. (2017a)	-18.3	16	32	-16.6	12.4	32	16.1%	-1.70 [-8.71, 5.31]	
Reza et al. (2013)	-30.4	15	50	-13.6	11.7	50	0.0%	-16.80 [-22.07, -11.53]	
Sharma et al. (2016)	-17.5	16.2	35	-18.6	16.2	35	13.7%	1.10 [-6.49, 8.69]	
Tveita et al. (2008)	-11	14	39	-10	11	37	24.8%	-1.00 [-6.65, 4.65]	
Yoon et al. (2016)	-22.5	8.5	30	-20	8	30	45.4%	-2.50 [-6.68, 1.68]	
Total (95% CI)			136			134	100.0%	-1.50 [-4.32, 1.31]	
Heterogeneity: Tau ² = Test for overall effect:	zrogenetty: Tau" = 0.00; Ch" = 0.70, df = 3 (P = 0.87); i" = 0% it for overall effect: Z = 1.05 (P = 0.29)								-20 -10 0 10 20 Favours IA Corticosteroid+Distension Favours IA Corticosteroid only

eFigure 3. Results of Pairwise Meta-analyses With Respective Mean Differences for Mid-term Outcomes

Mid-term results (4-6 months)

a) IA Corticosteroid vs No Treatment/Placebo

Pain

	IA Cort	icosteroid		No Treat	ment/Place	bo		Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Carette et al. (2003)	-5.1	2.7	25	-3.6	2.7	23	13.3%	-1.50 [-3.03, 0.03]	
Dehghan et al. (2013)	-4	2.1	29	-3.6	2.2	28	18.8%	-0.40 [-1.52, 0.72]	
Prestgaard et al. (2015)	-4.3	1.6	42	-2.9	1.3	42	0.0%	-1.40 [-2.02, -0.78]	
Rizk et al. (1991)	-1	2.1	16	-2.1	2	16	14.6%	1.10 [-0.32, 2.52]	
Roh et al. (2012)	-2.3	2.1	25	-1.9	2	25	18.5%	-0.40 [-1.54, 0.74]	
Ryans et al. (2005)	-1	2.4	20	-2.5	3.4	20	10.5%	1.50 [-0.32, 3.32]	
Shin & Lee (2013)	-5.1	2.1	48	-5.2	2	49	24.2%	0.10 [-0.72, 0.92]	
Total (95% CI)	C. Chil - 0.C		163	N. 12 _ 101		161	100.0%	-0.01 [-0.71, 0.70]	• • •
Test for overall effect: Z =	0.02 (P = 0.5	1, df = 5 (r 98)	= 0.0	9); F = 40,4					-4 -2 0 2 4 Favours IA Corticosteroid Favours No Treatment/Placebo

ER ROM

	IA Con	ticosteroid		No Treat	ment/Placebo			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Carette et al. (2003)	-29.5	17	25	-20.8	16.3	23	8.7N	-8.70 [-18.12, 0.72]	
Dehghan et al. (2013)	-16.6	11.6	29	-17.5	9.7	28	18.6%	0.90 [-4.64, 6.44]	•
Prestgaard et al. (2015)	-20.9	17	42	-14.3	14.7	40	14.1%	-6.60 [-13.47, 0.27]	
Rizk et al. (1991)	-6.6	14	16	-10.4	13	16	8.6%	3.60 [-5.56, 13.16]	
Roh et al. (2012)	-9	5	25	-6	8	25	24.1%	-3.00 [-7.43, 1.43]	
Ryans er al. (2005)	-19.1	19.2	20	-22.2	18.2	20	6.1%	3.10 [-8.49, 14.69]	
Shin & Lee (2013)	-33	14	48	-27	13	49	19.5%	-6.00 [-11.38, -0.62]	
Total (95% CI) Heterogeneity: $Tau^2 = 5.0$ Test for overall effect: $Z =$	6; Chi ² = 8.65, di 1.64 (P = 0.07)	f = 6 (P = 0.19)	205 ; 1 ² = 3	15		201	100.0%	-2.89 [-5.95, 0.18]	-20 -10 0 10 20 Famure La Controsteroid Famure No Treatment/Placebo
									and a second sec

b) IA Corticosteroid vs Physiotherapy

Pain

	IA Cort	IA Corticosteroid Physiothe						Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Carette et al. (2003)	-5.1	2.7	25	-4.4	2.8	27	17.5%	-0.70 [-2.20, 0.80]	
Dacre et al. (1989)	-4.2	2.4	22	-3.7	2.3	22	18.6%	-0.50 [-1.89, 0.89]	
Maryam et al. (2012)	-1.5	1.4	31	-2.2	0.7	27	29.0%	0.70 [0.14, 1.26]	
Ryans et al. (2005)	-1	2.5	20	-2.9	3.4	20	14.0%	1.90 [0.05, 3.75]	
van der Windt et al. (1998)	-6.3	3.1	53	-5.4	3.3	56	20.9%	-0.90 [-2.10, 0.30]	
Total (95% CI)			151			152	100.0%	0.07 [-0.85, 0.98]	-
Heterogeneity: $Tau^2 = 0.67$; Test for overall effect: $Z = 0$.	Chi ² = 11.66, 14 (P = 0.89)	df = 4 (P -	- 0.02)	; i² = 66%					-4 -2 0 2 4 Favours IA Corticosteroid Favours Physiotherapy

ER ROM

	IA Cort	icosteroid		Physi	otherapy			Mean Difference	Mean Difference
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Carette et al. (2003)	-29.5	17	25	-23	16.6	27	18.9%	-6.50 [-15.64, 2.64]	
Maryam et al. (2012)	-9.6	17.6	31	-5.6	5.6	27	37.0N	-4.00 [-10.55, 2.55]	
Ryans et al. (2005)	-19.1	19.2	20	-18	14	20	14.6%	-1.10 [-11.51, 9.31]	
van der Windt et al. (1998)	-13	18	53	-7	21	56	29.5%	-6.00 [-13.33, 1.33]	
Total (95% CI)			129			130	100.0%	-4.64 [-8.62, -0.66]	+
Heterogeneity: Tau2 = 0.00;	Chi ² = 0.77, df =	3 (P = 0.86); P	- 0%					-	-20 -10 0 10 20
Test for overall effect: Z = 2.						Favours IA Continosteroid Favours Physiotherapy			

c) IA Corticosteroid + Physiotherapy vs IA Corticosteroid only

Pain

	IA Corticoste	Corticosteroid+Physiotherapy IA				ly		Mean Difference	Mean Difference	
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]	
Carette et al. (2003)	-5.3	2.8	25	-5.1	2.7	25	11.3%	-0.20 [-1.72, 1.32]		_
Ducre et al. (1989)	-3.3	2.1	22	-4.2	2	22	17.6%	0.90 [-0.31, 2.11]		
Kraal er al. (2018)	-6	2.2	11	-5	1.9	10	8.5%	-1.00 [-2.75, 0.75]		
Maryam et al. (2012)	-1.6	1.4	30	-1.5	1.4	30	51.0%	-0.10 [-0.81, 0.61]		
Ryans et al. (2005)	-1.6	2.4	20	-1	2.5	20	11.4%	-0.60 [-2.12, 0.92]		
Total (95% CI)			108			107	100.0%	-0.07 [-0.58, 0.45]	+	
Heterogenety: Tau" = I	0.00; Chi ⁴ = 4.0	4, df = 4 (P = 0	0.40); ۴ -	1.1						-
Test for overall effect: 2	. = 0.26 (P = 0.	50)							Favours IA Corticosteroid + Physiotherapy Favours IA Corticosteroid only	

	IA Corticost	nerapy	IA Cortic	costeroid only			Mean Difference	Mean Difference	
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]
Carette et al. (2003)	-34.1	16.9	22	-29.5	17	25	26.5N	-4.60 [-14.31, 5.11]	
Kraal et al. (2018)	-42	12.9	10	-30	16.5	10	18.8%	-12.00 -24.98, 0.98]	· · · · · · · · · · · · · · · · · · ·
Maryam et al. (2012)	-5	11	29	-9.6	17.6	31	34.0N	4.60 [-2.78, 11.98]	
Ryans et al. (2005)	-19.7	19.7	20	-19.1	19.2	20	20.7%	-0.60 [-12.66, 11.46]	
Total (95% CI)			81			86	100.0%	-2.03 [-8.95, 4.88]	
Heterogeneity: Tau ² = Test for overall effect:	22.44; CH ² = 5.56 Z = 0.58 (P = 0.56	0, df = 3 (P = 0. i)	.14); 12 = 45	x					-20 -10 0 10 20 Favours IA Conticosteroid + Physiotherapy Favours IA Conticosteroid only

d) IA Corticosteroid + Physiotherapy vs Physiotherapy only

Pain

IA Corticosteroid + Physiotherapy only Mean Difference Mean Difference Study or Subgroup Mean [VAS] SD [VAS] Total Mean [VAS] SD [VAS] IV Random, 95% CI [VAS] Carette et al (2003) -5.3 2.5 22 Mean [VAS] IV, Random, 95% CI [VAS] Date et al (2003) -5.3 2.6 27 13.6% -0.90 [-2.45, 0.68] Date et al (2012) -1.6 2.4 20 2 2.5.5 X 0.07 XX 0.06 [0.05, 1.17] Regression (2005) -1.6 2.4 20 2.7 3.4 20 2.7 3.4 20 1.30 [-0.20, 10.5] Total (2012) -1.6 2.4 20 2.7 3.4 20 1.00.0% 0.43 [-0.20, 1.05] Favours Physiotherapy Favour		
Study or Subgroup Mean [VAS] SD [VAS] Total Weight IV, Random, 95% CI [VAS] IV, Random, 95% CI [VAS] Carette et al (2003) -5.3 2.6 22 -3.4 2.8 CI [VAS] IV, Random, 95% CI [VAS] Darce et al (2003) -5.3 2.1 22 -3.4 20 -2.2 0.7 27 SA 40 [-0.76, 1.56] Maryan et al (2012) -1.6 1.4 29 -2.2 0.7 27 SA 40 [-0.76, 1.56] Total (95% CD -1.6 2.4 20 -2.2 0.7 27 SA 40 [-0.76, 1.56] Total (95% CD -1.6 2.4 20 -2.2 0.7 27 SA 40 [-0.76, 1.56] -2.2 0.7 2.2 SW 10.00% 0.43 [-0.20, 10.5] -2.2 0<		
Carrete et al. (2003) -5.3 2.6 22 -4.4 2.8 27 13.6 4.0.9 [-2.4,6.0.68] Dacret et al. (1995) -3.3 2.1 22 -3.7 1.6 22 22.5 4.0.40 [-0.76, 1.56] Dacret et al. (2012) -3.3 2.1 22 -3.7 1.6 22 22.5 0.0.40 [-0.76, 1.56] Rayne et al. (2012) -1.6 1.4 23 -2.2 0.7 27 53.4 0.60 [0.03, 1.17] Ryans et al. (2003) -1.6 2.4 20 -2.9 3.4 20 10.5 1.30 [-0.52, 3.12] Total (95% CD) 93 96 100.0% 0.43 [-0.20, 1.05] Herrogenetics, Tau' = 0.10; Ch' = 3.91, df = 3 (P = 0.27); t' = 23X Test for overall effect: Z = 1.33 (P = 0.15) ER ROM LA Corticosteroid + Physiotherapy Physiotherapy only Mean Difference Mean Difference IV. Random, 95% CI (degrees) Carete et al. (2012) -3.1 3.6 22 -23 3.2 27 35.4 M -11.10 [-3.05, -9.17] Maryan et al. (2012) -5 11 29 -5.6 5.6 27 55.7 M -11.20 [-3.5, 5.13] For al. (2012) -1.5 7 20 -1.8 14 20 2.5.9 -1.70 [-12.29, 8.89] Total (05% CD) 71 74 100.0% -4.49 [-13.78, 4.81]		
Dece et al. (1989) Haryan et al. (2012) Total (2050) -1.6 1.4 29 -2.2 2.2.5 X Maryan et al. (2012) -1.6 1.4 29 -2.9 2.4 20 -2.9 2.4 20 -2.9 3.4 20 10.5 X 1.30 [-0.52, 3.12] Total (95% CI) ERROM I A Corticosteroid + Physiotherapy Man Ofference I A Corticosteroid + Physiotherapy I A Corti		
Maryam et al. (2012) -1.6 1.4 29 -2.2 0.7 27 53.4x 0.60 [0.03, 1.17] Ryans et al. (2005) -1.6 2.4 20 -2.9 3.4 20 1.05x 1.30 [-0.52, 3.12] Total (95% CI) 93 96 100.0% 0.43 [-0.20, 1.05] -2 0 2 Herrogenetics 51.0f = 3.91, df = 3 (P = 0.27); f' = 23X 96 100.0% 0.43 [-0.20, 1.05] -2 0 2 Faxours IA Corticosteroid + Physiotherapy Physiotherapy only Mean Difference Mean Difference Nean Difference		
Kyzins et al. (2005) -1.6 2.4 20 -2.9 3.4 20 1.30 [-0.52, 3.12] Total (95% CD) 93 96 100.0% 0.43 [-0.20, 1.05] Heterogenetity: Tat' = 0.10; Ch' = 3.91, df = 3 (P = 0.27); t' = 23X 96 100.0% 0.43 [-0.20, 1.05] Favours IA Corticosteroid + Physiotherapy Favours IA Corticosteroid + Physiotherapy Favours Physiotherapy only Mean Difference Mean Difference Study or Subgroup Mean [degrees] Total Mean [degrees] Total Mean [degrees] Total Mean [degrees] No and Difference Study or Subgroup Mean [degrees] Total Mean [degrees] Total Mean [degrees] Total Mean [degrees] No and Difference Margan et al. (2012) -34 3.6 22 -23 3.2 22 35.4% -11.10 [-3.05, -9.17] Margan et al. (2023) -31 2.9 -5.6 5.6 22 25.7% -17.0 [-12.29, 8.69] Total (95% CD) -19.7 19.7 20 -18 14 20 25.9% -1.70 [-12.29, 8.69] Total (95% CD) -27.65; CD ² - 27.65; CD ² - 27.65; CD ² - 26 < 0.000D); f* 9 23%		
Total (95% CD) 93 96 100.0% 0.43 [-0.20, 1.05] Hererogenety: Tau" = 0.10; Ch" = 3.91, df = 3 (P = 0.27); P = 23X 96 100.0% 0.43 [-0.20, 1.05] Fest for overall effect: Z = 1.33 (P = 0.15) IA Corticosteroid + Physiotherapy Physiotherapy only Mean Difference Mean (degrees) SD (degrees) Total Mean (degrees) SD (degrees) Total Mean (degrees) SD (degrees) IV, Random, 95% CI (degrees) Many et al. (2012) -3.1 3.6 22 -23 3.2 27 35.4% -11.00 [-3.30, 9.17] Maryan et al. (2012) -3.1 2.9 -5.6 5.6 27 25.7% 0.60 [-3.35, 5.13]		
Hereropenetry: $Tau' = 0.10$; $Chi' = 3.91$, $d' = 0.27$; $l' = 23X$ Test for overall effect: $Z = 1.33$ ($P = 0.10$; ERROM <u>Kan (degrees)</u> SD (degrees) <u>Total Weight IV, Random, 95X CI (degrees)</u> <u>IV, Random, 95X CI (degrees)</u> <u>Kan (degrees)</u> SD (degrees) <u>Total Weight IV, Random, 95X CI (degrees)</u> <u>IV, Random, 95X CI (degrees)</u> <u>Rayse stal. (2012)</u> -34.1 <u>3.6</u> <u>22</u> -23 <u>3.2</u> <u>27</u> <u>35.48X</u> -11.10 (-13.03, -9.17) <u>Rayse stal. (2012)</u> -31.1 <u>29</u> -5.6 <u>5.6</u> <u>27</u> <u>35.7X</u> 0.60 (-13.78, 5.51) <u>Rayse stal. (2012)</u> -18 <u>14</u> <u>20</u> 22.95X -1.70 (-12.29, 8.89) <u>Total (95X CI)</u> <u>71</u> <u>74</u> 100.0X -4.49 (-13.78, 4.81]		
Test for overåll effect: Z = 1.33 (P = 0.16) Favours IA Corticosteroid + Physiotherapy Pavours Physiotherapy only Favours IA Corticosteroid + Physiotherapy Physiotherapy only Mean Difference Study or Subgroup Mean [degrees] SD [degrees] Total Mean [degrees] Mean Difference V. Random, 95% CI [degrees] Carette et al. (2012) -34.1 3.2 27 St.4% -11.10 [-13.05, -9.17] Mean [degrees] Total Mean [degrees] Total Weight IV, Random, 95% CI [degrees] V. Random, 95% CI [degrees] Total (2012)	<u> </u>	
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Is Corticosteroid + Physiotherapy Physiotherapy only Mean Difference Mean Difference Study or Subgroup Mean (degrees) SD (degrees) Total Mean (degrees) Mean Difference Mean Difference Nean Difference N. Random, 95% CI (degrees) N. Random, 95% CI (degrees) Carette et al. (2012) - 3 2 27 35.48 - 11.10 (-13.05, -9.17) - Margan et al. (2023) - 3 2 27 25.48 - 11.10 (-13.05, -9.17) - Total (2023) - 1 21 - 7 - Total (2023) - 1 - 1 - Total (2035) - 7 - 7 - 7 - 7 - 7 - 7<		
ER ROM Study or Subgroup Mean [degrees] SD [degrees] Total Mean [degrees] SD [degrees] Mean [degrees] SD [degrees] Mean [degrees] SD [degrees] Total Mean [degrees] Mean [degrees] Mean [degrees] Total Mean [degrees] Mean [degrees] <th col<="" td=""><td></td></th>	<td></td>	
Lik Criticosteroid + Physiotherapy Physiotherapy only Mean Difference Mean Difference Mean Difference Study or Subgroup Mean [degrees] SD [degrees] Total Mean [degrees] Total Weight IV, Random, 95% CI [degrees] IV, Random, 95% CI [degrees] Current et al. (2012) -34.1 3.6 22 -23 3.2 27 354.8% -11.10 [-13.05, -9.17] IV, Random, 95% CI [degrees] Margan et al. (2012) -5 11 29 -5.6 5.6 27 25.7% 0.60 [-13.35, 5.13] IV		
LA Corticosteroid + Physiotherapy Physiotherapy only Mean Difference Mean Difference Study or Subgroup Mean (degrees) Total Mean (degrees) SD (degrees) Total Weight IV, Random, 95% CI (degrees) IV, Random, 95% CI (degrees) Carette et al. (2012) -5 11 22 -2.3 3.2 27 35.4% -9.17 Maryam et al. (2012) -5 11 29 -5.6 5.6 27 35.7% 0.60 (-3.33, 5.13) Ryars et al. (2003) -19.7 19.7 20 -18 14 20 25.9% -1.70 (-12.28, 8.89) Total (95% CI) 71 74 100.0% -4.49 (-13.78, 4.81)		
Study or Subgroup Mean [degrees] Total Mean [degrees] Total Mean [degrees] IV, Random, 95% CI [degrees] IV, Random, 95% CI [degrees] Carence et al. (2003) -34.1 3.6 22 -23 3.2 27 36.4% -11.10 [-13.03, -9.17] Margam et al. (2012) -5 11 29 -5.6 5.6 27 35.7% 0.60 [-33.5, 5.13]		
Carette et al. (2003) -34.1 3.6 22 -23 3.2 27 38.4% -11.10 [-13.03, -9.17] Margam et al. (2012) -5 11 29 -5.6 5.6 27 35.7% 0.60 [-3.33, 5.13] Kyare et al. (2003) -19.7 19.7 20 -18 14 20 25.9% -1.70 [-12.29, 8.69] Total (95% CI) 71 74 100.0% -4.49 [-13.78, 4.81]		
Maryam et al. (2012) -5 11 29 -5.6 5.6 27 35.7% 0.60 (-3.33, 5.13] Ryars et al. (2005) -19.7 19.7 20 -18 14 20 25.9% -1.70 (-12.29, 8.69) Total (95% Cl) 71 74 100.0% -4.49 (-13.78, 4.81) Hestrogenetic Tau' - 57.65; Ch ² - 27.65; Ch ² - 27.65		
Kyaras et al. (2005) -15.7 15.7 20 -16 14 20 25.9% -1.70 [-12.29, 8.69] Total (95% Cf) 71 74 100.0% -4.49 [-13.78, 4.81]		
Total (95% C1) 71 74 100.0% -4.49 [-13.78, 4.81]	-	
Hestrogenetix: Tau ² - 57.68; Ch ² - 23.65, df - 2 (P < 0.00001); l ² - 92%		
=20 =10 0 10	10 20	
Test for overall effect 2 = 0.95 (P = 0.34) Favours Physiotherapy Favours Physiotherapy	erapy only	

e) IA Corticosteroid vs SA Corticosteroid

Pain									
	IA Cort	ticosteroid		SA Cor	ticosteroid			Mean Difference	Mean Difference
Study or Subgroup	Mean [VAS]	SD [VAS]	Total	Mean [VAS]	SD [VAS]	Total	Weight	IV, Random, 95% CI [VAS]	IV, Random, 95% CI [VAS]
Rizk et al. (1991)	-1	1.6	16	-1.4	2.1	16	28.7%	0.40 [-0.89, 1.69]	
Shin & Lee (2013)	-5.1	1.6	48	-5.8	2.1	49	37.2%	0.70 [-0.04, 1.44]	
Yoon et al. (2016)	-3.7	1.6	30	-2.6	2.1	30	34.1%	-1.10 [-2.04, -0.16]	
Total (95% CI)			94			95	100.0%	-0.00 [-1.18, 1.18]	-
Heterogeneity: Tau ² = Test for overall effect:	0.84; Chi ² = Z = 0.00 (P =	8.91, df = = 1.00}	2 (P =	0.01); i² = 71	3 %				-4 -2 0 2 4 Favours IA Corticosteroid Favours SA Corticosteroid

	IA Con	icosteroid		SA Con	ticosteroid			Mean Difference	Mean Difference				
Study or Subgroup	Mean [degrees]	SD [degrees]	Total	Mean [degrees]	SD [degrees]	Total	Weight	IV, Random, 95% CI [degrees]	IV, Random, 95% CI [degrees]				
Rizk et al. (1991)	-6.6	23.5	16	-10.9	21.9	16	10.8%	4.30 [-11.44, 20.04]					
Shin & Lee (2013)	-33	23.5	48	-26	21.9	49	26.9%	-7.00 [-16.04, 2.04]					
Yoon et al. (2016)	-25	9	30	-26	8	30	62.2%	1.00 [-3.31, 5.31]	_				
Total (95% CI)			94			95	100.0%	-0.80 [-6.28, 4.68]	-				
Heterogeneity: Tau" =	Here regenerally: Tau' = 7.73; Ch' = 2.76, df = 2 (P = 0.25); H = 28%												
Test for overall effect:	Z = 0.29 (P = 0.7	(8)							Favours IA Corticosteroid Favours SA Corticosteroid				

eFigure 4. Results of Pairwise Meta-analyses With Respective Mean Differences for Function **Function Early short-term results (2-6 weeks)**

a) IA Corticosteroid vs No Treatment/Placebo

	IA Cor	ticoste	roid	No Treat	ment/Plac	ebo		Std. Mean Difference	Std. Mean Difference			
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI		IV, Random, 95% CI		
Bal et al. (2008)	-29.5	36.8	40	-28	31.8	40	13.8%	-0.04 [-0.48, 0.40]				
Calls et al. (2006)	-11.9	10.7	26	-6.7	11.8	20	11.0%	-0.46 [-1.05, 0.13]				
Carette et al. (2003)	-36.7	25.5	25	-18.9	25.5	23	11.2%	-0.69 [-1.27, -0.10]				
Prestgaard et al. (2015)	-35.2	20.3	42	-20.3	21.2	40	13.6%	-0.71 [-1.16, -0.26]				
Ranalletta et al. (2015)	-39.3	4.7	36	-15	3.3	38	0.0%	-5.95 [-7.04, -4.86]				
Roh et al. (2012)	-6	33	35	-2	33	35	13.2%	-0.12 [-0.59, 0.35]				
Ryans et al. (2005)	-27.5	28.8	20	-14	15.3	20	10.3%	-0.57 [-1.21, 0.06]				
Sharma et al. (2016)	-29.7	18.7	35	-10	20.6	37	12.8%	-0.99 [-1.48, -0.50]				
Shin & Lee (2013)	-42.5	21.5	48	-18.2	20.8	49	14.0%	-1.14 [-1.57, -0.71]				
Total (95% CI)			271			264	100.0%	-0.59 [-0.89, -0.30]		•		
Heterogeneity: $Tau^2 = 0.1$ Test for overall effect: $Z =$	1; Chr -	- 19.23	, df = 7	(P = 0.00	7); I ² = 64	×			-2	-1 0 1 2		
·····	5.54 fr	- 0.00								Favours IA Corticosteroid Favours No Treatment/Placebo		

b) IA Corticosteroid vs Physiotherapy

	IA Cor	ticoste	roid	Phys	iother	ару		Std. Mean Difference	Std. Mean Difference			
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI			
Calis et al. (2006)	-11.9	10.7	20	-14.9	10.5	26	0.0%	3.00 [-3.19, 9.19]				
Carette et al. (2003)	-36.7	25.5	25	-22.2	24.9	27	19.8%	-0.57 [-1.12, -0.01]				
Maryam et al. (2012)	-19.7	44.1	31	-9.8	43.8	27	22.8%	-0.22 [-0.74, 0.30]				
Ryans et al. (2005)	-27.5	28.8	20	-15.8	22.1	20	15.5%	-0.45 [-1.08, 0.18]				
van der Windt et al. (1998)	-19	27	53	-6	22	56	41.9%	-0.53 [-0.91, -0.14]				
Total (95% CI)			129			130	100.0%	-0.45 [-0.70, -0.20]	◆			
Heterogeneity: Tau ² = 0.00;	Cht2 = 1	.06, df	= 3 (P									
Test for overall effect: Z = 3.	58 (P =	0.0003)						Favours IA Corticosteroid Favours Physiotherapy			

c) IA Corticosteroid + Physiotherapy vs IA Corticosteroid only

	IA Coticostero	id+Physioth	erapy	IA Cortic	osteroid	only		Std. Mean Difference	Std. Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Carette et al. (2003)	-46.5	24.9	22	-36.7	25.5	25	31.6%	-0.38 [-0.96, 0.20]	
Kraal et al. (2018)	-68	29.6	11	-11	27.8	10	0.0%	-57.00 [-81.55, -32.45]	
Maryam et al. (2012)	-26.9	43	29	-19.7	44.1	31	41.1%	-0.16 [-0.67, 0.34]	
Ryans et al. (2005)	-35.1	25.7	20	-27.5	28.8	20	27.3%	-0.27 [-0.90, 0.35]	
Total (95% CI)			71			76	100.0%	-0.26 [-0.59, 0.06]	-
Heterogeneity: Tau" = (0.00; Chi ² = 0.31	, df = 2 (P =	0.86); ۴	- 0%					-2 -1 0 1 2
lest for overall effect. 2	= 1.56 (P = 0.1	1)							Favours IA Corticosteroid+Physiotherapy Favours IA Corticosteroid only

d) IA Corticosteroid + Physiotherapy vs Physiotherapy only

	IA Corticostero	id+Physioth	herapy	Physiot	herapy	only		Std. Mean Difference	Std. Mean	Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Rando	om, 95% Cl	
Carette et al. (2003)	-46.6	24.9	22	-22.2	24.9	27	32.1%	-0.96 [-1.56, -0.37]			
Maryam et al. (2012)	-26.9	43	29	-9.8	43.8	27	40.2%	-0.39 [-0.92, 0.14]		<u>+-</u> :	
Ryans et al. (2005)	-35.1	25.7	20	-15.8	22.1	20	27.7%	-0.79 [-1.44, -0.14]			
Total (95% CI) Heterogeneity: Tau ⁴ = 0	0.01: Chi ² = 2.14	df = 2 (P =	71 0.34): ۲	- 7%		74	100.0%	-0.68 [-1.03, -0.33]			
Test for overall effect: Z	= 3.83 (P = 0.0	001)	0.0400						-2 -1 Favours IA Corticosteroid+Physiotherapy	0 1 Favours Physiotherapy only	2

e) IA Corticosteroid vs SA Corticosteroid

	IA Cor	ticoste	roid	SA Co	rticoste	roid		Std. Mean Difference		Std. Mean Difference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI		IV, Random, 95% CI		
Cho et al. (2016)	-52.4	13.2	42	-36.5	16.2	42	0.0%	-15.90 [-22.22, -9.58]				
Oh et al. (2011)	-20	18.2	37	-16	18.2	34	24.2%	-0.22 [-0.68, 0.25]				
Shin & Lee (2013)	-42.5	21.5	48	-37.6	24.5	49	33.2%	-0.21 [-0.61, 0.19]				
Sun et al. (2018)	-10.6	27.7	32	-13.8	20.4	32	22.0%	0.13 [-0.36, 0.62]				
Yoon et al. (2016)	-8.8	18.5	30	-9.4	20.2	30	20.6%	0.03 [-0.48, 0.54]				
Total (95% CI)			147			145	100.0%	-0.09 [-0.32, 0.14]		•		
Heterogeneity: Tau2 =	0.00; C	hr² = 1.	63, df -	- 3 (P -	0.65);	r² = 0%			-2			
Test for overall effect:	Z = 0.7	5 (P = (0.45)						-4	Favours IA Corticosteroid Favours SA Corticosteroid		

f) IA Corticosteroid + Arthrographic Distension vs IA Corticosteroid only

	IA Corticoster	oid + Disten	sion	IA Cortic	osteroid	only		Std. Mean Difference	Std. Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Lee et al. (2017a)	-32.5	11.1	32	-24.2	11.8	32	32.9%	-0.72 [-1.22, -0.21]	
Sharma et al. (2016)	-29.6	16.9	35	-29.7	18.7	35	34.9%	0.01 [-0.46, 0.47]	
Yoon et al. (2016)	-20.7	18.4	30	-8.8	18.5	30	32.2%	-0.64 [-1.16, -0.12]	
Total (95% CI)			97			97	100.0%	-0.44 [-0.90, 0.02]	
Heterogeneity: Tau ² = 6	0.10; Chi ² = 5.1	4, df = 2 (P -	- 0.08); I	r = 61%					-2 -1 0 1 2
Test for overall effect: 2	z = 1.87 (P = 0.	06)							Favours IA Continesteroid + Distension, Favours IA Continesteroid only

Function Late short-term results (8-12 weeks)

a) IA Corticosteroid vs No Treatment/Placebo



b) IA Corticosteroid vs Physiotherapy



c) IA Corticosteroid vs SA Corticosteroid



d) IA Corticosteroid + Arthrographic Distension vs IA Corticosteroid only

	IA Corticoster	roid + Diste	nsion	IA Cortic	osteroid	only	5	Std. Mean Difference	Std. Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Lee et al. (2017a)	-35.4	10.4	32	-36.2	10.6	32	23.7%	0.08 [-0.41, 0.57]	
Sharma et al. (2016)	-40.4	17.6	35	-40	19	35	26.0%	-0.02 [-0.49, 0.45]	
Tvetta et al. (2008)	-39	21	39	-36	22	37	28.2%	-0.05 [-0.50, 0.40]	-
Yoon et al. (2016)	-19.9	19.1	30	-15.1	17.6	30	22.1%	-0.26 [-0.77, 0.25]	
Total (95% CI)			136			134	100.0%	-0.06 [-0.30, 0.18]	•
Heterogeneity: Tau ² = i	0.00; Chl ² = 0.9	0, df = 3 (P	- 0.82);	r = 0%					
Test for overall effect: 2	z = 0.47 (P = 0.	64)			Favours IA Corticosteroid + Distension Favours IA Corticosteroid only				

Function mid-term results (4-6 months)

a) IA Corticosteroid vs No Treatment/Placebo

IA Con	ticoste	roid	No Treat	ment/Pla	cebo		Std. Mean Difference	Std. Mean Difference			
Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI			
-51.3	25.5	25	-38.4	24.5	23	13.9%	-0.51 [-1.08, 0.07]				
-51.9	20.4	42	-43.2	21.2	40	24.1%	-0.41 [-0.85, 0.02]				
-22	33	35	-14	33	35	20.9%	-0.24 [-0.71, 0.23]				
-35.1	26.6	20	-29.7	24.3	20	12.0%	-0.21 [-0.83, 0.41]				
-48.5	15.2	48	-46.4	18.2	49	29.1%	-0.12 [-0.52, 0.27]				
		170			167	100.0%	-0.28 [-0.50, -0.07]	•			
00; Chl ² 2.57 (P	- 1.63,	df = 4 ((P = 0.80);	r² = 0%				-2 -1 0 1 2			
	IA Con Mean -51.3 -51.9 -22 -35.1 -48.5 00; Chi ² = 2.57 (P	IA Corticoste <u>Mean</u> <u>SD</u> -51.3 25.5 -51.9 20.4 -22 33 -35.1 26.6 -48.5 15.2 00; Ch ² = 1.63, = 2.57 (P = 0.01	IA Corticosteroid Mean SD Total -51.3 25.5 25 -51.9 20.4 42 -22 33 35 -55.1 26.6 20 -48.5 15.2 48 170 00; Ch ² = 1.63, df = 4 (-2.57 (P = 0.01)	IA Corticosteroid No Treat Mean SD Total Mean -51.3 25.5 25 -38.4 -51.9 20.4 42 -43.2 -22 33 35 -14 -35.1 26.6 20 -29.7 -48.5 15.2 48 -46.4 170 00; Ch² = 1.63, df = 4 (P = 0.80); -2.57 (P = 0.01)	IA Corticosteroid No Treatment/Pic Mean SD Total Mean SD -51.3 25.5 25 -38.4 24.5 -51.9 20.4 42 -43.2 21.2 -22 33 35 -14 33. -48.5 15.2 48 -46.4 18.2 170 00; Ch² = 1.63, df = 4 (P = 0.80); ² = 0% 2.57 (P = 0.01) -45.7 2.57 (P = 0.01)	IA Corticosteroid Mean No Treatment/Placebo Mean SD Total -51.3 25.5 25 -38.4 24.5 23 -51.9 20.4 42 -43.2 21.2 40 -22 33 35 -14 33 35 -35.1 26.6 20 -29.7 24.3 20 -48.5 15.2 48 -46.4 18.2 49 00; Ch ² -1.63, df -4 47 -0.80); l ² -0.8 2.57 (P<0.01) 167 -0.80); l ² 0.8 -1.57 167	IA Corticosteroid Mean No Treatment/Placebo -51.3 25.5 25 -38.4 24.5 23 13.9K -51.9 20.4 42 -43.2 21.2 40 24.1K -22 33 35 -14 33 35 20.9K -35.1 26.6 20 -29.7 24.3 20 12.0K -48.5 15.2 48 -46.4 18.2 49 29.1% 00; Ch ² -1.63, df -4 49 -0.80); l ² 0.167 100.0% -2.57 (P 0.01) 167 100.0% 167 100.0%	IA Corticosteroid Mean No Treatment/Placebo Std. Mean Difference -51.3 25.5 25 -38.4 24.5 23.13,9% -0.51.1,10,90,07 -51.9 20.4 42 -43.2 21.2 40 24.1% -0.41 [-0.85, 0.02] -22 23 35 -14 33 35 20.9% -0.24 [-0.71, 0.23] -35.1 26.6 20 -29.7 24.3 20 12.0% -0.21 [-0.83, 0.47] -48.5 15.2 48 -46.4 18.2 49 29.1% -0.12 [-0.52, 0.27] 170 167 100.0% -0.28 [-0.50, -0.07] 2.57 (# -0.01) -2.57 (# -0.01)			

a) IA Corticosteroid vs Physiotherapy

Study or Subgroup	IA Cor Mean	ticoste SD	roid Total	Phys Mean	iother SD	apy Total	Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV. Random, 95% CI
Carette et al. (2003)	-51.3	25.5	25	-43.1	24.9	27	21.4%	-0.32 [-0.87, 0.23]	
Maryam et al. (2012)	-22.3	42.5	31	-28.5	40.6	27	23.6X	0.15 [-0.37, 0.66]	
Ryans et al. (2005)	-35.1	26.6	20	-25.2	26.1	20	17.0%	-0.37 [-0.99, 0.26]	
van der Windt et al. (1998)	-45	30	53	-30	34	56	38.1%	-0.46 [-0.84, -0.08]	
Total (95% CI)			129			130	100.0%	-0.27 [-0.55, 0.00]	-
Heterogeneity: Tau ² = 0.01;	Chl ² = 3.	.61, df	= 3 (P						
Test for overall effect: Z = 1.	95 (P = (0.05)		Favours IA Corticosteroid Favours Physiotherapy					

a) IA Corticosteroid + Physiotherapy vs IA Corticosteroid only

	IA Corticostero	IA Corticosteroid only			Std. Mean Difference		Std. Mean Difference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Carette et al. (2003)	-52.5	24.9	22	-51.3	25.5	25	27.9%	-0.05 [-0.62, 0.53]	
Kraal et al. (2018)	-73	27.4	11	-68	15.6	10	12.4%	-0.21 [-1.07, 0.65]	
Maryam et al. (2012)	-22.6	46.9	29	-22.3	42.5	31	35.8%	-0.01 [-0.51, 0.50]	
Ryans et al. (2005)	-34.2	26.1	20	-35.1	26.6	20	23.9%	0.03 [-0.59, 0.65]	
Total (95% CI)			82			86	100.0%	-0.03 [-0.34, 0.27]	
Heterogeneny: $ au^{-} = 0.00; Cn^{-} = 0.22, at = 3 (r = 0.87); r = 0%$ Test for overall effect: $Z = 0.22 (P = 0.83)$									-2 -1 0 1 2
								Favours IA Corticosteroid + Physiotherapy Favours IA Corticosteroid only	

a) IA Corticosteroid + Physiotherapy vs Physiotherapy only



eFigure 5. TSA Results for IA Corticosteroid vs No Treatment or Placebo for Early Short-term Pain



Supplementary Figure 5 Trial sequential analysis results for intra-articular corticosteroid vs no treatment/placebo early short-term pain. The two horizontal red lines represent the conventional thresholds for statistical significance (Z=1.96, P<0.05), the vertical red the required information size, the diagonal red line the TSA boundaries (thresholds for statistical significance) and the blue the cumulative amount of information as trials are added. A significant result is denoted by an inter-crossing of the blue and diagonal red lines.

Supplementary Figure 6

eFigure 6. TSA Results for IA Corticosteroid vs No Treatment or Placebo for Late Short-term Pain



Supplementary Figure 6b. Trial sequential analysis results for intra-articular corticosteroid vs no treatment/placebo late short-term pain. The two horizontal red lines represent the conventional thresholds for statistical significance (Z=1.96, P<0.05), the vertical red ine the required information size, the diagonal red line the TSA boundaries (thresholds for statistical significance) and the blue the cumulative amount of information as trials are added. A significant result is denoted by an inter-crossing of the blue and diagonal red lines.



eFigure 7. Network Forest Plots With Consistency Test for Late Short-term Pain

A, no treatment/placebo; B, intra-articular corticosteroid; C, physiotherapy; D, subacromial corticosteroid; E, arthrographic distension plus intra-articular corticosteroid; F, oral corticosteroid



eFigure 8. Network Forest Plots With Consistency Test for Mid-term Pain

A, no treatment/placebo; B, intra-articular corticosteroid; C, physiotherapy; D, subacromial corticosteroid; E, intra-articular corticosteroid plus physiotherapy.