肩關節鏡手術合併使用PRP是否可有效增進肩袖旋轉肌撕裂傷的修復

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日期:112年6月20日

肩袖旋轉肌撕裂(Rotator cuff tears)

- ✓ **肩袖旋轉肌撕裂**，是造成肩膀疼痛和失能常見的原因。
- ✓ 經估計，於60歲以上的患者中，其中約有30%的患者有某種形式的肩袖旋轉肌損傷。
- ✓ 儘管手術被視為標準治療方法，但是再撕裂和復發症狀的發生率極高，有報告顯示高達**70%**。
- ✓ 關於再撕裂可能原因，根據研究顯示，肌腱的修復潛力差，因為會產生**疤痕組織**，其耐受撕裂力比正常、健康的肌腱組織小。

生長因子

- ✓ 依據研究和臨床應用結果顯示，生長因子是一種能夠支持**肌腱修復機制**的生物因子。
- ✓ 這些生物活性細胞因子可通過**增強細胞遷移**、**細胞增殖**、**血管生成**和**基質沉積**，來減少炎症反應，並促進癒合。
- ✓ PRP 是一種自體血製品，含有豐富的生長因子和生物活性細胞因子，包括血管內皮生長因子、胰島素樣生長因子、纖維細胞生長因子、血小板衍生生長因子、轉化生長因子 β 和表皮生長因子。

何謂PRP(platelet-rich plasma)?

- ✓ PRP(platelet-rich plasma)又稱高濃度血小板血漿，是增生治療的一種。
- ✓ 將患者的血液抽出並離心後，**利用濃縮血漿並去除紅血球、白血球，來純化血小板，進而獲取其中高濃度的生長因子**，利用自身的多種生長因子，注射到患處，來促進血管新生以及組織修復與再生。
- ✓ 由於完全獲取於患者自身細胞，因此不會造成排斥、過敏等不良反應。

臨床應用

✓ 目前本院手術室已應用於骨科、婦產科、耳鼻喉科。

科別	部位	價錢(元)
骨科	關節、韌帶、肌腱損傷	31250
婦產科	間質性膀胱炎	21000
耳鼻喉科	聲帶、扁桃線、鼻息肉傷口修復	31250

動機

Q:手術室平均每週有三台肩關節鏡手術，用於治療肩袖旋轉肌撕裂傷，若將肩關節鏡手術合併使用PRP，是否可有效增進肩袖旋轉肌撕裂傷的修復呢?

Journal of *Clinical Medicine*

MDPI

Systematic Review

The Effect of PRP Augmentation of Arthroscopic Repairs of Shoulder Rotator Cuff Tears on Postoperative Clinical Scores and Retear Rates: A Systematic Review and Meta-Analysis

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Abstract: The aim of this review and meta-analysis is to assess recent clinical trials concerning the combination of operative treatment of rotator cuff tears and the administration of PRP and its effect on clinical scores and postoperative retear rates. The trials were used to compare the combination of PRP treatment and arthroscopic rotator cuff repair to arthroscopy alone. Twenty-five clinical trials were reviewed. A risk-of-bias assessment was made for all randomized clinical trials included, using the Cochrane collaboration's tool as well as a quality assessment for all non-randomized studies utilizing the Newcastle–Ottawa scale. The PRP-treated patients showed statistically significant improvement postoperatively compared to control groups concerning the Constant–Murley (mean difference 2.46, 95% CI 1.4–3.52, $p < 0.00001$), SST (mean difference 0.32, 95% CI 0.02–0.63, $p = 0.04$), and UCLA (mean difference 0.82, 95% CI 0.23–1.43, $p = 0.07$) scores. A statistically significant decrease of retear rates in the PRP-treated patients, with a risk ratio of 0.78 (95% CI 0.65–0.94, $p = 0.01$), was found. We believe that the results presented have positive aspects, especially concerning the retear risk, but are yet inconclusive concerning clinical results such as shoulder pain and function.

影響係數IF: 4.964

評讀工具: FAITH

SR Appraisal sheets(FAITH)

Appraisal Tool

[系統性文獻回顧Systematic Review]

步驟1: 系統性文獻回顧探討的問題為何? (PICO)

步驟2：系統性文獻回顧的品質如何? (內在效度)

步驟3: 結果為何? (效益)

步驟1:系統性文獻回顧探討的問題為何?

- ✓ P(Patient/Population/Problem)
  肩袖旋轉肌撕裂傷病人
- ✓ I(Intervention)
  肩關節鏡手術合併使用PRP
- ✓ C(Comparison)
  單純肩關節鏡手術
- ✓ O(Outcomes)
  增進肩袖旋轉肌撕裂傷的修復

SR Appraisal sheets(FAITH)

Appraisal Tool

[系統性文獻回顧Systematic Review]

步驟1: 系統性文獻回顧探討的問題為何? (PICO)

步驟2：系統性文獻回顧的品質如何? (內在效度)

步驟3: 結果為何? (效益)

步驟2:系統性文獻回顧的品質如何?

- F-研究是否找到(Find)所有的相關證據?

P2-3

2. Materials and Methods

2.1. Inclusion Criteria and Study Design

Full-length, English-language articles that reported clinical outcomes were screened for inclusion, dated from 2010 to the end of August of 2021. We decided to include any clinical trials that compared the combination of arthroscopic treatment for rotator cuff tears and administration of PRP products to arthroscopic repair alone. The time period between PRP administration and surgery should not have been longer than one month. The postoperative rehabilitation protocols must have been identical for the two patient groups of each study. The articles had to provide patient results measured in specific clinical scores and/or data of retear rates for a minimum postoperative period of six months. The clinical scores reported had to be any of the following: Constant–Murley, the American Shoulder and Elbow Surgeons Shoulder (ASES) score, the UCLA score, and the simple shoulder test (SST) since these were the scores most used in the literature. In addition, any articles concerning revision operations and studies where the patients have had previous operations on the affected shoulder were excluded as well.

2.2. Data Extraction

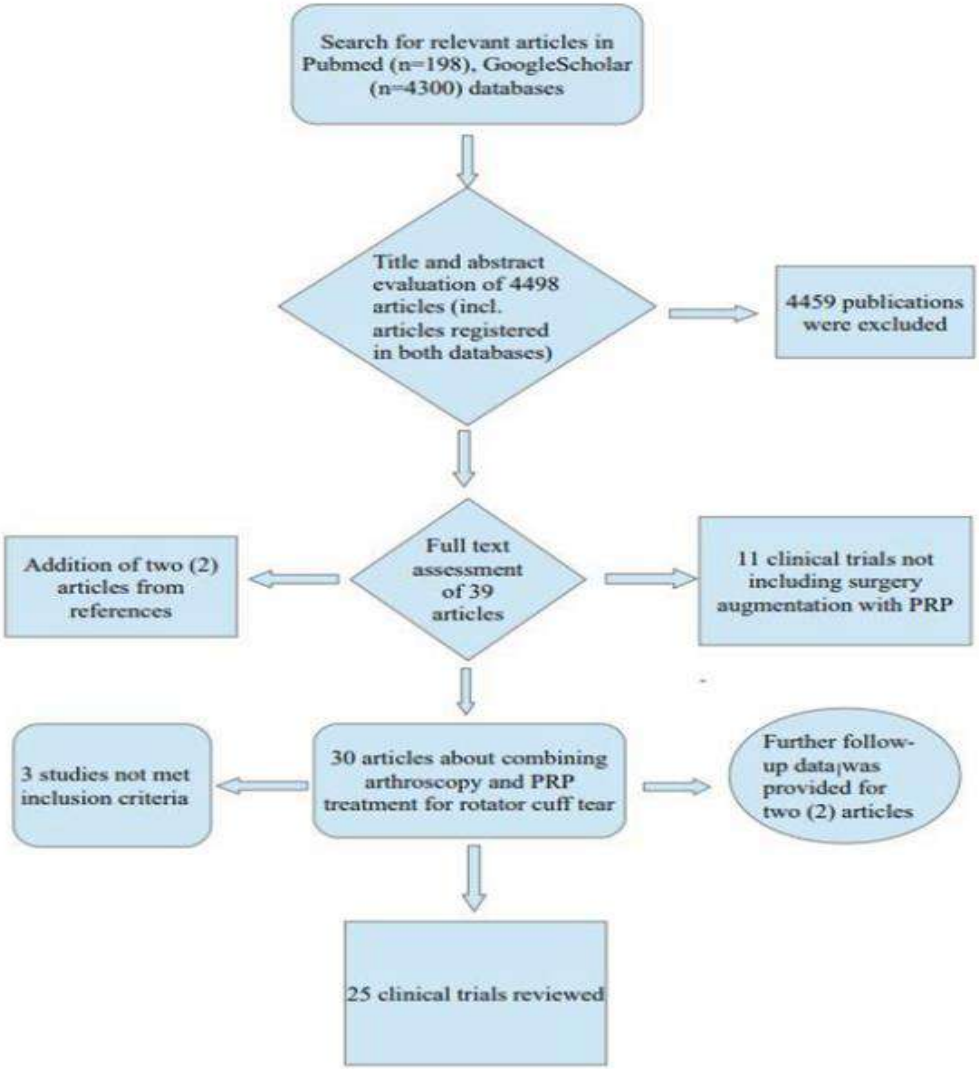
The search was performed through the *PubMed* and *Google Scholar* databases. The keywords and phrases used were "shoulder rotator cuff tear", "PRP", and "arthroscopy". The search provided 4498 publications, including articles found in both databases.

- 作者從2010年起至2021年8月透過”Pubmed”和”Google Schoolar”資料庫篩選文章。
- 納入條件：文章為完整全文、撰寫語言為英文以及文章內容為PRP合併關節鏡修復或單純肩關節鏡手術為主之臨床試驗的文章。
- 排除條件：任何關於翻修手術，以及患者曾進行過肩部手術的研究文章。
- 篩選關鍵字：”肩袖旋轉肌撕裂”、“PRP”及“關節鏡”。

步驟2:系統性文獻回顧的品質如何?

- F-研究是否找到(Find)所有的相關證據?

不清楚



1. 經過資料庫搜尋找出共計４４９８篇文獻，刪除重複研究４４５９篇。
2. 限制搜索:文獻標題至少包含兩個關鍵字、並且為臨床試驗以及發表於描述的時間範圍內。
3. 經評估文章全文後，最後納入２５篇文獻進行系統性回顧及統合分析。

✓ **說明：文獻搜尋只有一個資料庫(Pubmed)，並且加上文獻引用檢索(Google Schoolar)，搜尋語言只限英文，使用一般檢索詞彙。**

步驟2:系統性文獻回顧的品質如何?

- A-文獻是否經過嚴格評讀(Appraisal)?

2.3. Quality and Risk of Bias Assessment

Out of the 25 trials assessed, 16 were randomized controlled clinical trials. We used the Cochrane collaboration's tool for assessing risk of bias in randomized trials [47] for these articles, and the results are summarized in Table 1. All but one of the trials provided information concerning the random sequence generation during the randomization procedure, while six of the trials lacked information of the allocation concealment. In a total of six studies, the blinding of patients, physicians, and/or the personnel assessing the outcome was inadequate, and in one study, the information concerning the blinding of physicians was lacking. Finally, one study was characterized as having an unclear risk of bias from other sources since it was completed earlier than originally planned because of the results of the interim statistical analysis.

- 25個試驗中，有16組為隨機對照臨床試驗，作者使用考科藍合作組織偏差風險評估工具(risk of bias)進行評估

步驟2:系統性文獻回顧的品質如何?

- A-文獻是否經過嚴格評讀(Appraisal)?

不清楚

As far as the non-randomized studies are concerned, we used the Newcastle–Ottawa Scale (NOS) for assessing the quality of nonrandomized studies in meta-analyses [48]. Concerning the assessment criteria, we considered a follow-up period of at least one year concerning the clinical scores and an imaging assessment for possible retears of at least six months postoperatively as adequate [49]. In addition, we accepted as adequate a follow-up rate of at least 90% about the clinical scores and 75% about the postoperative imaging. All articles had a rating of at least seven "stars" out of a possible nine in total. The quality assessment is summarized in Table 2.

- 關於非隨機研究，作者使用Newcastle-Ottawa Scale(NOS)品質評估量表，進行研究質量的評估。

評估標準		
項目	時間	追蹤率
臨床評分	至少一年	90%
影像追蹤	至少六個月	75%

步驟2:系統性文獻回顧的品質如何?

- I-是否只納入(Included)具良好效度的文章?

V是

Table 1. Risk-of-bias assessment for randomized studies according to the Cochrane collaboration's tool.

考科藍合作組織偏差風險評估結果

	Selection Bias		Performance Bias	Detection Bias	Attrition Bias	Reporting Bias	Other Bias
	Random sequence generation	Allocation concealment	Blinding of participants and researchers	Blinding of outcome assessment	Incomplete outcome data	Selective reporting	
Castricini et al. [10]	+	+	+	+	+	+	+
Randelli et al. [38]	+	+	+	+	+	+	+
Marquez et al. [36]	+	?	-	-	+	+	+
Gumina et al. [27]	+	+	+	+	+	+	+
Rodeo et al. [39]	+	+	+	-	+	+	?
Weber et al. [42]	+	+	+	+	+	+	+
Antuna et al. [19]	+	+	-	+	+	+	+
Jo et al. [31]	+	?	-	-	+	+	+
Malavolta et al. [33,34]	?	?	+	+	+	+	+
Jo et al. [32]	+	?	-	?	+	+	+
Ebert, Wang et al. [5,41]	+	?	-	-	+	+	+
Flury et al. [26]	+	+	+	+	+	+	+
Pandey et al. [37]	+	+	+	+	+	+	+
D'Ambrosi et al. [24]	+	+	?	+	+	+	+
Zumstein et al. [44]	+	?	+	+	+	+	+
Snow et al. [40]	+	+	+	+	+	+	+

Legend: low risk of bias, +; high risk of bias, -; unclear risk of bias, ?.

說明

項目	高風險/不清楚(篇)
隨機序列產生方式	1
分組隱匿	6
對受試者和研究人員及結果評估者實施盲法	6
其他	1

✓ 其中一篇文獻以期中分析為研究結果，而提前完成臨床實驗，故在「其他偏差」項目評估為「不清楚」

步驟2:系統性文獻回顧的品質如何?

- I-是否只納入(Included)具良好效度的文章?

V是

紐卡索渥太華品質評估量表評估結果

Table 2. Assessment of non-randomized studies according to the Newcastle–Ottawa quality assessment scale for cohort studies.

	Selection			Comparability		Outcome			Total
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure	Demonstration that outcome of interest was not present at start	Comparability of cohorts on the basis of the design or analysis	Assessment of outcome	Was follow-up long enough for outcomes to occur	Adequacy of follow up of cohorts	
Barber et al. [20]	*	*	*	*	**	*	*	*	9
Jo et al. [30]	*	*	*	*	**	*	*	*	9
Bergeson et al. [21]	*	*	*	*	**	*	*	*	9
Buford [46]			*	*	**	*	*	*	7
Charousset et al. [23]	*	*	*	*	**	*	*		8
Zhang et al. [43]	*	*	*	*	**	*	*	*	9
Gwinner et al. [28]	*	*	*	*	**	*	*	*	9
Dukan et al. [25]	*	*	*	*	**	*	*	*	9
Auregan et al. [45]	*	*	*	*	**	*			7

Legend: *, **: number of "stars" allocated according to the Newcastle–Ottawa scale.

- 非隨機研究評讀結果，依照NOS量表，每篇文獻皆有7顆星以上(含7顆星)，表示為高質量研究。

步驟2:系統性文獻回顧的品質如何?

- T-作者是否以表格和圖表「總結」(Total)試驗結果? V是

➢ 根據文獻中表三、五、六顯示，將肩關節鏡合併使用PRP與否，是否可有效增進肩袖旋轉肌撕裂傷之修復，以臨床分數進行評分。

Table 3. Comparison of post-operative Constant–Murley scores between PRP and control group at final follow-up.

Constant-Murley scores

	PRP + Arthroscopy			Arthroscopy				Mean Difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI
Auregan et al. [45]	77	13.5	26	72.4	12.3	23	2.2%	4.6 [−2.62, 11.82]
Castricini et al. [10]	88.4	7.62	43	88.4	7.78	45	10.8%	0 [−3.22, 3.22]
Charousset et al. [23]	77.3	9.9	31	78.1	7.7	30	5.7%	−0.8 [−5.24, 3.64]
D'Ambrosi et al. [24]	81	11.2	20	78.5	9	20	2.8%	2.5 [−3.8, 8.8]
Dukan et al. [25]	86.7	11.1	32	81.6	14.4	37	3.1%	5.1 [−0.93, 11.13]
Ebert, Wang et al. [5,41]	86.2	11.4	27	85.2	11.3	28	3.1%	1.0 [−5.0, 7.0]
Flury et al. [26]	82.7	8	49	82.1	9.5	52	9.6%	0.6 [−2.82, 4.02]
Gumina et al. [27]	77.9	5.7	39	74.2	6.1	37	15.9%	3.7 [1.04, 6.36]
Gwinner et al. [28]	79	13	18	77	13	18	1.6%	2.0 [−6.49, 10.49]
Jo et al. [30]	79.12	13.42	19	82	13.02	23	1.7%	−2.88 [−10.93, 5.17]
Jo et al. [31]	74.82	14.3	24	69.84	16.29	24	1.5%	4.98 [−3.69, 13.65]
Jo et al. [32]	74.67	9.17	37	70.87	9.76	37	6%	3.8 [−0.52, 8.12]
Malavolta et al. [33,34]	82.1	11	26	82	9.5	25	3.5%	0.1 [−5.53, 5.73]
Marquez et al. [36]	65.6	13.1	14	64.1	13.6	14	1.1%	1.5 [−8.39, 11.39]
Pandey et al. [37]	93.2	4.97	52	87.6	8.12	50	16.3%	5.6 [2.98, 8.22]
Randelli et al. [38]	82.4	6.3	22	78.7	10	23	4.8%	3.7 [−1.16, 8.56]
Snow et al. [40]	72.8	19.36	40	72.6	18.54	47	1.8%	0.2 [−7.81, 8.21]
Zhang et al. [43]	81.5	7.7	30	80.3	6.7	30	8.4%	1.2 [−2.45, 4.85]
Total (95% CI)			549			563	100%	2.46 [1.4, 3.52]

Heterogeneity: $Chi^2 = 17.21$, $df = 17$ ($p = 0.44$), $I^2 = 1\%$. Test for Overall Effect: $Z = 4.56$ ($p < 0.00001$).

步驟2:系統性文獻回顧的品質如何?

- T-作者是否以表格和圖表「總結」(Total)試驗結果? V是

➢ 根據文獻中表三、五、六顯示，將肩關節鏡合併使用PRP與否，是否可有效增進肩袖旋轉肌撕裂傷之修復，以臨床分數進行評分。

Table 5. Comparison of post-operative SST scores between PRP and control groups at final follow-up.

SST scores

	PRP + Arthroscopy			Arthroscopy				Mean Difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI
Charousset et al. [23]	9.9	2.9	35	10.2	2	35	6.9%	−0.3 [−1.47, 0.87]
Gumina et al. [27]	10.5	0.8	39	10.1	1	37	56%	0.4 [−0.01, 0.81]
Jo et al. [30]	9.83	3.31	19	10.57	1.73	23	3.4%	−0.74 [−2.39, 0.91]
Jo et al. [31]	10.33	2.3	24	9.88	2.79	24	4.5%	0.45 [−1.0, 1.9]
Jo et al. [32]	10.24	2.14	37	9.76	2.27	37	9.3%	0.48 [−0.53, 1.49]
Randelli et al. [38]	11.3	0.9	22	10.9	1.4	23	19.9%	0.4 [−0.28, 1.08]
Total (95% CI)			176			179	100%	0.32 [0.02, 0.63]

Heterogeneity: $Chi^2 = 3.0$, $df = 5$ ($p = 0.7$), $I^2 = 0$. Test for overall effect: $Z = 2.07$ ($p = 0.04$).

步驟2:系統性文獻回顧的品質如何?

- T-作者是否以表格和圖表「總結」(Total)試驗結果? V是

➢ 根據文獻中表三、五、六顯示，將肩關節鏡合併使用PRP與否，是否可有效增進肩袖旋轉肌撕裂傷之修復，以臨床分數進行評分。

Table 6. Comparison of post-operative UCLA scores between PRP and control groups at final follow-up.

UCLA scores

	PRP + Arthroscopy			Arthroscopy				Mean Difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI
Charousset et al. [23]	29.1	2.3	35	30.3	3.2	35	21.2%	−1.2 [−2.51, 0.11]
Jo et al. [30]	31.78	6.15	19	30.83	4.96	23	3.1%	0.95 [−2.48, 4.38]
Jo et al. [31]	30.13	3.98	24	29.21	6.04	24	4.3%	0.92 [−1.97, 3.81]
Jo et al. [32]	30.73	4.15	37	29.54	4.86	37	8.5%	1.19 [−0.87, 3.25]
Malavolta et al. [33,34]	32.1	4.6	26	32.5	3.8	25	6.8%	−0.4 [−2.71, 1.91]
Pandey et al. [37]	34.75	0.72	52	32.22	3.55	50	35.9%	2.53 [1.53, 3.53]
Randelli et al. [38]	33.3	2.2	22	31.3	4.1	23	9.9%	2.0 [0.09, 3.91]
Weber et al. [42]	27.94	4.98	30	29.59	1.68	30	10.2%	−1.65 [−3.53, 0.23]
Total (95% CI)			245			247	100%	0.83 [0.23, 1.43]

Heterogeneity: $Chi^2 = 29.65$, $df = 7$ ($p = 0.0001$), $I^2 = 76\%$. Test for overall effect: $Z = 2.7$ ($p = 0.007$).

步驟2:系統性文獻回顧的品質如何?

- T-作者是否以表格和圖表「總結」(Total)試驗結果? V是

➢ 文獻中表七，將研究數據進行整理，總共1418名病患參與研究，肩袖關節再撕裂風險比為0.78(p=0.01)，表示PRP治療對於此項常見併發症具有相當保護作用，未來可減少肩袖關節裂傷再次修補手術。

Table 7. Comparison of post-operative retear rates between PRP and control groups at final follow-up.

	Arthroscopy + PRP		Arthroscopy			Risk Ratio
Study	Retear incidents	Patients number	Retear incidents	Patients number	Weight	M-H, Fixed, 95% CI
Antuna et al. [19]	13	14	10	14	5.9%	1.3 [0.91, 1.87]
Auregan et al. [45]	10	26	7	23	4.4%	1.26 [0.58, 2.77]
Barber et al. [20]	6	20	12	20	7.1%	0.5 [0.23, 1.07]
Bergeson et al. [21]	9	16	8	21	4.1%	1.48 [0.74, 2.96]
Buford [46]	2	50	3	50	1.8%	0.67 [0.12, 3.82]
Castricini et al. [10]	1	40	4	38	2.4%	0.24 [0.03, 2.03]
Charousset et al. [23]	11	31	12	30	7.2%	0.89 [0.46, 1.69]
D'Ambrosi et al. [24]	0	20	0	20		Not estimable
Dukan et al. [25]	3	32	5	37	2.7%	0.69 [0.18, 2.68]
Ebert, Wang et al. [5,41]	2	29	3	30	1.7%	0.69 [0.12, 3.83]
Flury et al. [26]	5	49	9	53	5.1%	0.6 [0.22, 1.67]
Gumina et al. [27]	0	39	3	37	2.1%	0.14 [0.01, 2.54]
Gwinner et al. [28]	2	18	5	18	2.9%	0.4 [0.09, 1.8]
Jo et al. [30]	4	15	7	17	3.9%	0.65 [0.24, 1.78]
Jo et al. [31]	4	20	10	18	6.2%	0.36 [0.14, 0.95]
Jo et al. [32]	1	33	6	30	3.7%	0.15 [0.02, 1.19]
Malavolta et al. [33,34]	0	22	1	22	0.9%	0.33 [0.01, 7.76]
Marquez et al. [36]	9	14	6	14	3.5%	1.5 [0.73, 3.08]
Pandey et al. [37]	2	52	10	50	6.0%	0.19 [0.04, 0.83]
Randelli et al. [38]	9	22	12	23	6.9%	0.78 [0.41, 1.48]
Rodeo et al. [39]	12	36	6	31	3.8%	1.72 [0.73, 4.05]
Snow et al. [40]	6	39	8	38	4.8%	0.73 [0.28, 1.91]
Weber et al. [42]	12	28	7	24	4.4%	1.47 [0.69, 3.13]
Zhang et al. [43]	4	30	9	30	5.3%	0.44 [0.15, 1.29]
Zumstein et al. [44]	6	17	6	18	3.4%	1.00 [0.42, 2.65]
Total (95% CI)	133	712	169	706	100%	0.78 [0.65, 0.94]

Heterogeneity: $Chi^2 = 36.76\%$, df = 23 ($p = 0.03$), $I^2 = 37\%$. Test for overall effect: Z = 2.58, ($p = 0.01$).

步驟2:系統性文獻回顧的品質如何?

- T-作者是否以表格和圖表「總結」(Total)試驗結果? V是

➢ 統計結果數據均小於最小臨床重要差異(MCID)，於臨床上的影響是有存疑的。

Concerning the results reported, sufficient data to compare postoperative Constant–Murley scores between treatment and control groups were provided in 18 studies. After calculating the mean difference between these scores, it was found that the PRP-treated patients had higher scores, and this difference was statistically significant, while there was no statistically significant difference in the baseline scores reported (16 studies). However, this difference has been estimated to be quite low: of approximately 2.46 points ($p < 0.00001$) on the Constant scale. The results are similar concerning the UCLA score and the SST, with a statistically significant improvement in the PRP group of 0.83 points ($p = 0.007$, 8 studies) in the UCLA score and 0.32 points ($p = 0.04$, 6 studies) in the SST. In addition, processing the data concerning the ASES results did not result in any difference of statistical significance. It is worth noting that the differences in these results are of doubtful clinical impact, as they are lower than the minimal clinically important difference (MCID) for rotator cuff tear, which has been estimated to be between 6.7 and 26.9 points for the Constant–Murley score [50–52], between 2 and 3 points for the UCLA score [52,53], and between 1.2 and 4.3 points for the SST [54]. These results are presented in Tables 3–6.

臨床分數	平均值相差	95%信賴區間	P值	異質性I^2	MCID(分)
Constant-Murley scores	2.46	1.4-3.52	< 0.00001	1%	6.7-26.9
SST scores	0.32	0.02-0.63	0.04	0%	1.2-4.3
UCLA scores	0.82	0.23-1.43	0.07	76%	2-3

步驟2:系統性文獻回顧的品質如何?

- H-試驗的結果是否相近-異質性(Heterogeneity)?

V是

項目	異質性I^2
Constant-Murley scores	1%
SST scores	0%
UCLA scores	76%
FINAL follow-up	37%

✓ 說明：可能存在中度異質性

Discussion

- 手術成功的衡量標準通常以疼痛緩解、功能的恢復和其他各種的結果測量，並非一定為肌腱的完全癒合，而臨床評分結果取決於病人的功能需求和主觀感受。
- 試驗中使用了不同的PRP產品。目前有關凝膠狀纖維或液體血漿哪種效果更好以及是偏好白血球貧乏還是富含白血球的PRP仍在討論中。
- 手術技術不同也會存在差異。

總評(Summary)

系統性文獻回顧品質如何(FAITH)	
F - 研究是否找到 (Find) 所有的相關證據？	UNCLEAR
A - 文獻是否經過嚴格評讀 (Appraisal)？	UNCLEAR
I - 是否只納入 (included) 具良好效度的文章？	YES
T - 作者是否以表格和圖表「總結」 (total up) 試驗結果？	YES
H - 試驗的結果是否相近 - 異質性 (Heterogeneity)？	YES

SR Appraisal sheets(FAITH)

Appraisal Tool

[系統性文獻回顧Systematic Review]

步驟1: 系統性文獻回顧探討的問題為何? (PICO)

步驟2：系統性文獻回顧的品質如何? (內在效度)

步驟3: 結果為何? (效益)

結論

5. Conclusions

Our review has shown that the combination of PRP treatment and arthroscopic shoulder rotator cuff repair shows lower retear rates than arthroscopic repair alone, according to the analysis of the trials reviewed. Concerning the postoperative clinical scores, the statistically significant improvement of Constant–Murley, UCLA, and SST scores is lower than the minimal clinically important difference, and it is therefore uncertain whether they represent a higher level of functional and activity level in the patients' everyday life. The lack of data concerning the exact composition of PRP products used and the different surgical techniques are weaknesses of the present study. There is a need for further studies in order to bolster and confirm the above results as well as to evaluate the cost-effectiveness and the ideal therapeutic scheme of such treatments.

- 經文獻回顧，根據試驗分析結果，肩袖旋轉肌再撕裂風險，使用肩關節鏡合併PRP比單獨使用肩關節鏡來得低。
- 雖然臨床評分(Constant－Murley、UCLA、SST)的統計具有顯著改善，卻均低於最小臨床重要效果(MCID)，所以無法確定是否代表患者於日常生活中擁有更好的功能和活動度。
- 試驗中PRP的成分及不同手術技術為本研究不足之處，未來需要更進一步研究來確認上述結果，同時評估成本效益及理想的治療方案。

研究弱點

一、**PRP 產品種類不同**：25篇研究試驗納入不同的 PRP 產品，因為使用 PRP 產品的成份不同，且缺乏足夠的數據來說明研究中所使用生物處理的確切組成，這增加了此手術效果的不確定性。

二、**手術術式不同**：所納入的試驗中，手術的術式存在有差異性，不同的手術技術會影響治療的結果。影像學顯示，執行double-row repair 術式患者的肌腱癒合更好，再撕裂率更低。

問題

Q:肩關節鏡手術合併使用PRP是否可有效增進肩袖旋轉肌撕裂傷的修復呢?

同意	0票
需再評估	21票
不同意	3票

恭 請 指 導