

Different techniques for peritoneal dialysis catheter implantation: A systematic review and network meta-analysis

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腹膜透析介紹

腹膜透析換液週期

1 引流期

將充滿代謝廢物的透析液排出體外，約需 15 - 20 分鐘。

2 注入期

灌入另一袋新鮮的透析液至腹腔內。

3 留置期

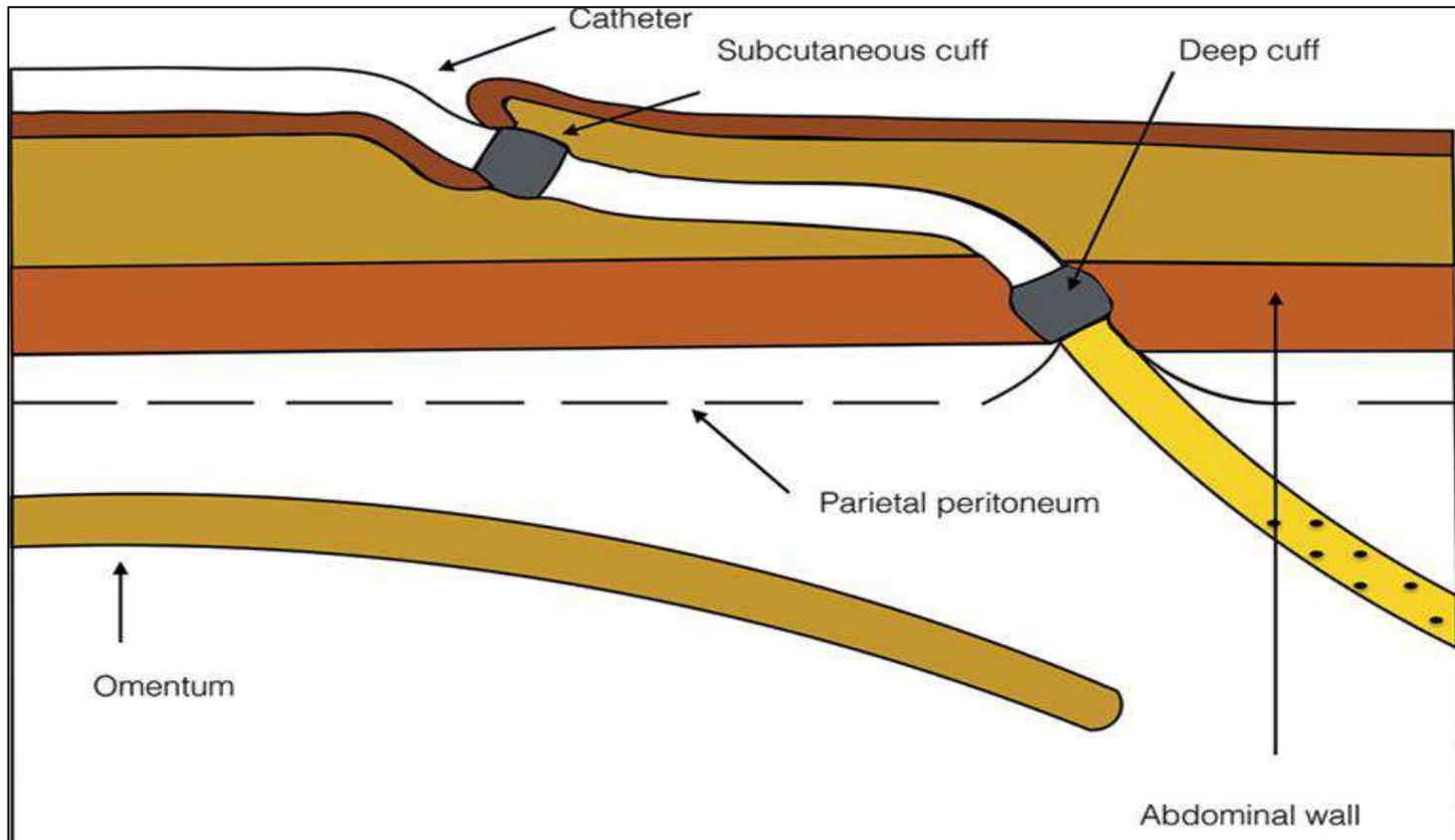
4 - 6 小時

透析液留置腹腔內 4 - 6 小時，進行透析。此時病人可自由活動。

利用腹膜做毒素和水份的交換



腹膜透析介紹



需手術放入透析導管(Tenckhoff Catheter)
約10天後開始腹膜透析



腹膜透析管路(tenckhoff)置入術

open surgery catheterization(OSC)

住院-全身/半身麻醉



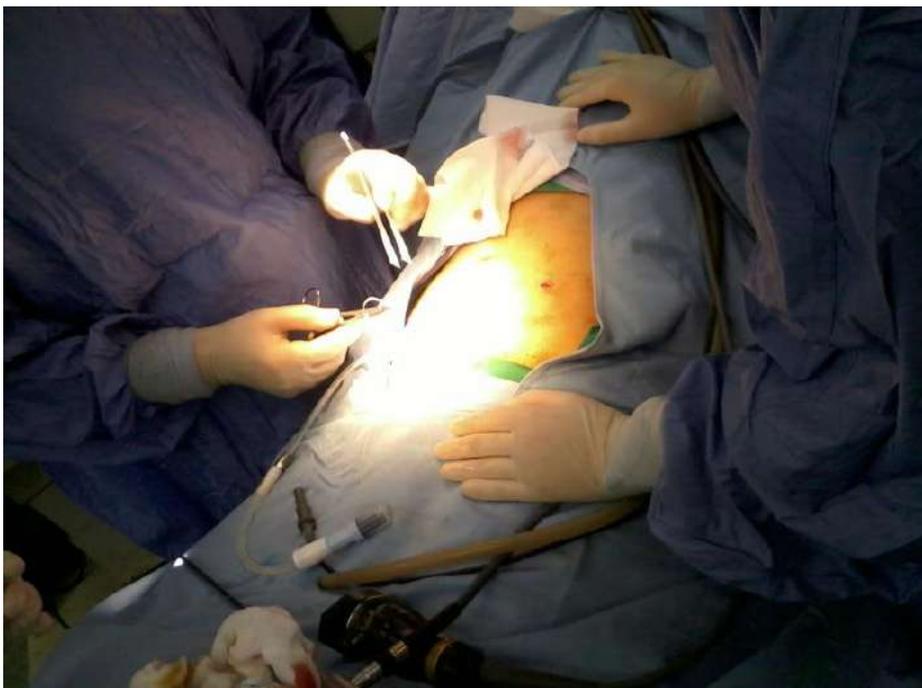
<https://www.youtube.com/watch?v=nrnr2ehWiUM>



腹膜透析管路(tenckhoff)置入術

Laparoscopic catheterization(LC)

住院-全身麻醉



腹膜透析管路(tenckhoff)置入術 percutaneous catheterization(PC) 門診/住院-局部麻醉



<https://www.youtube.com/watch?v=hhe0r50tNmw>



動機

107~109年LC植管發生滲漏病人共4位，其中一位滲漏嚴重轉血液透析；107-110年共14位因尿毒偏高、心肺功能較差無法全身麻植管故先行HD(增加HD併發症風險)

與他院經驗交流，有經皮導管植入腹膜透析手術的相關經驗且效果良好，故提出此問題尋找文獻，探討應用在臨床上的可行性？

經皮導管植入術使用套管針或導絲的經皮技術（Seldinger技術）簡單、且微創，是否能成為另一項安全的手術方式，以減少併發症、住院時間及等待傷口癒合期？



步驟 1：系統性文獻回顧探討的問題為何？

研究族群／問題
(**P**opulation/**P**roblem)

Patient with ESRD

介入措施
(**I**ntervention)

Percutaneous catheterization

比較
(**C**omparison)

**Laparoscopic & open surgery
catheterization**

結果
(**O**utcomes)

**Catheter mechanical
dysfunction & Complication**



 Check for updates

PERITONEAL
DIALYSIS
INTERNATIONAL



Review Article

Different techniques for peritoneal dialysis catheter implantation: A systematic review and network meta-analysis

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步驟 2：系統性文獻回顧的品質如何？(FAITH)

F—研究是否找到 (Find) 所有的相關證據？

良好的文獻搜尋至少應包括二個主要的資料庫 (如：Medline, Cochrane 考科藍實證醫學資料庫, EMBASE 等)，並且加上文獻引用檢索 (參考文獻中相關研究、Web of Science, Scopus 或 Google Scholar)、試驗登錄資料等。文獻搜尋應不只限於英文，並且應同時使用 MeSH 字串及一般檢索詞彙 (text words)。

Methods

P.2

Literature search strategy

We searched PubMed, EMBASE, The Cochrane Library, China National Knowledge Infrastructure, Wanfang Data, VIP data, and ClinicalTrials.gov from 1 January 1999 to 31 December 2018. Additionally, we screened for conference abstracts on the website of American Society of Nephrology (ASN) and European Renal Association–European Dialysis and Transplant Association. There were no language restrictions on inclusion for this systematic review. We reported the results according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.¹⁴

評讀結果：是 否 不清楚



步驟 2：系統性文獻回顧的品質如何？(FAITH)

F—研究是否找到 (Find) 所有的相關證據？

在文章的方法(Methods)章節，可以找到詳細搜尋策略的說明，包括使用的名詞，結果(Results) 章節中可以找到本篇系統性文獻回顧評估的摘要及全文文獻數目、文獻納入與排除的數量及原因。資料可能會以圖表或 PRISMA 的流程圖呈現。

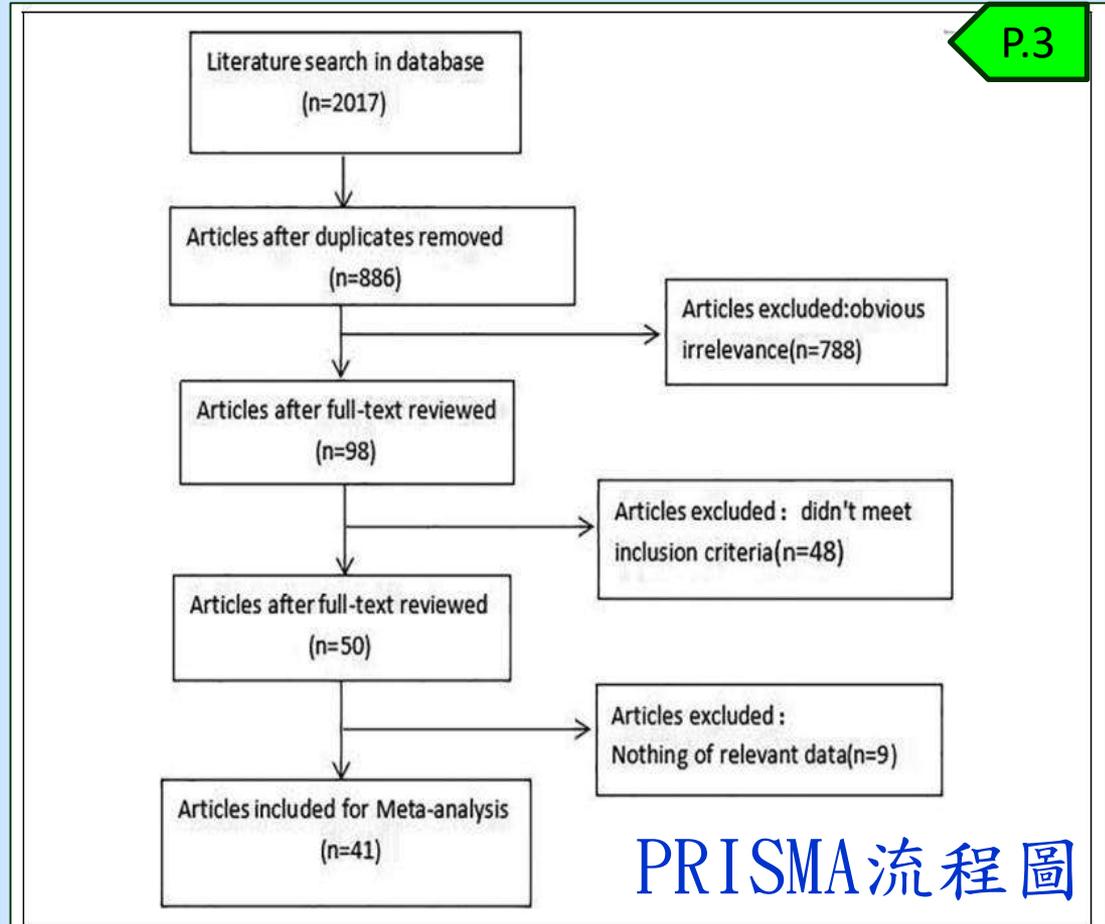


Figure 1. Literature search and study selection.

步驟 2：系統性文獻回顧的品質如何？(FAITH)

A—文獻是否經過嚴格評讀 (Appraisal)？

應根據不同臨床問題的文章類型，選擇適合的評讀工具，並說明每篇研究的品質。

Data extraction and quality evaluation

P.2

Two independent reviewers extracted data to a standardized form and assessed the quality of the included randomized controlled trials (RCTs) according to the Cochrane Collaboration's tool for assessing risk of bias by Higgins and Green.¹⁵ Additionally, we adopted the Newcastle–Ottawa Scale (NOS)¹⁶ to assess the methodological quality of the observational clinical studies. The extracted data included first author, published year, country or area, the total participants, type of intervention, and general demographic characteristics of participants in each group.



步驟 2：系統性文獻回顧的品質如何？(FAITH)

最後納入了 41 項研究（9 篇隨機對照試驗（RCTs）和 32 篇觀察性試驗） N= 3902

Table 2. Characteristics of all the included studies and NOS scores for observational clinical trials.

Trials	Countries or area	Interventions		Sample size		Sex (male/female)		Age		Prior abdominal surgery		Outcomes ^a	NOS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
Voss et al. ¹⁸	New Zealand	LC	PC	56	57	30/26	28/29	60.6 ± 4.1	61.7 ± 4.0	—	—	②④⑤⑥⑦	—
Jwo et al. ¹⁹	Taiwan	OSC	LC	40	37	18/22	12/25	50.7 ± 14.8	53.6 ± 13.9	5	4	①②③⑤⑦	—
Atapour et al. ²⁰	Iran	OSC	PC	30	31	12/18	21/10	51.5 ± 19.2	58.5 ± 14.7	—	—	②④⑤⑥⑦	—
Tsimoyiannis et al. ²¹	Greece	OSC	LC	25	25	16/4	18/7	63.5 ± 3.6	53.8 ± 12.5	—	—	③④⑤⑦	—
van Laanen et al. ²²	Netherlands	OSC	LC	44	46	24/20	29/17	64.5 ± 14.1	62.6 ± 14.1	23	22	①②③⑤⑦	—
Wright et al. ²³	Britain	OSC	LC	24	21	15/9	14/7	49.3 ± 20.2	46.4 ± 14.8	5	11	②③④⑤⑦	—
Gadallah et al. ²⁴	United States	OSC	PC	72	76	22/34	37/39	45.0 ± 12.6	50.6 ± 13.3	33	37	④⑤⑥⑦	—
Xu et al. ²⁵	China	OSC	LC	25	25	17/8	16/9	59.2 ± 16.8	53.7 ± 14.6	—	—	②④⑤⑦	—
Qiao et al. ²⁶	China	OSC	LC	58	58	—	—	—	—	—	—	①④⑤⑦	—
Bircan and Kulah ²⁷	Japan	OSC	LC	34	35	21/13	17/18	62.7 ± 14.5	67.7 ± 10.4	—	—	③④⑤⑦	8
Draganic et al. ¹²⁸	Australia	OSC	LC	30	30	7/22	16/14	56.9 ± 15.9	51.5 ± 13.5	—	—	②⑤⑦	7
Bae et al. ²⁹	Korea	OSC	LC	32	22	23/9	16/6	49.6 ± 14.7	45.2 ± 15.8	1	6	②⑤⑦	7
Gajjar et al. ³⁰	United States	OSC	LC	30	45	—	—	—	—	4	14	②④⑤⑦	7
Batey et al. ³¹	United States	OSC	LC	12	14	9/3	8/6	43.2 ± 13.1	47.5 ± 15.2	—	—	④⑤	6
Li et al. ³²	Taiwan	OSC	LC	23	50	13/10	22/28	47.0 ± 27.4	51.0 ± 17.9	2	12	②④⑤⑦	7
Ögünç et al. ³³	Japan	OSC	LC	21	21	8/13	12/9	44.2 ± 3.6	51.1 ± 2.0	0	11	②③④⑤⑦	8
Al-Hwiesh ³⁴	Saudi Arabia	PC	LC	22	21	14/8	13/8	48.0 ± 15.2	52.0 ± 12.3	—	—	②③④⑤⑥⑦	7
Borazan et al. ³⁵	Japan	PC	LC	30	12	12/18	5/7	43.6 ± 9.0	42.4 ± 8.0	—	—	①②④⑤⑦	7
Mellotte et al. ³⁶	United Kingdom	OSC	PC	180	50	—	—	—	—	—	—	①②③④⑤⑦	7
Medani et al. ³⁷	Ireland	OSC	PC	64	63	41/23	45/18	49.4 ± 16.4	51.1 ± 16.0	—	—	②③④⑦	7
Khositrangsikun et al. ³⁸	Thailand	OSC	PC	149	56	—	—	—	—	—	—	①②④⑦	7
Park et al. ³⁹	South Korea	OSC	PC	78	89	45/33	55/34	48.0 ± 14.0	50.0 ± 14.0	17	4	①②③④⑤⑦	7
Sampathkumar et al. ⁴⁰	India	OSC	PC	21	25	—	—	56.8 ± 13.7	53.0 ± 10.7	—	—	④	7
Ozener et al. ⁴¹	United States	OSC	PC	82	133	43/39	74/59	55.0 ± 18.0	52.0 ± 17.0	—	—	①③④⑤	8
Perakis et al. ⁴²	Greece	OSC	PC	84	86	47/28	41/36	61.7 ± 16.7	64.0 ± 14.9	—	—	③	7
Eklund et al. ⁴³	Finland	OSC	PC	43	65	52/48	56/44	50.1 ± 12.6	50.7 ± 10.2	—	—	③④⑤⑦	7
Soontrapornchai and Simapatanapong ⁴⁴	Thailand	OSC	LC	52	50	35/17	33/17	60.0 ± 11.0	55.0 ± 11.0	—	—	①②③④⑤⑦	7
Medani et al. ⁴⁵	Ireland	OSC	PC	162	151	97/65	96/55	50.4 ± 15.3	51.7 ± 16.8	—	—	③④	7
Maher et al. ⁴⁶	New Zealand	PC	LC	133	153	80/53	80/73	58.2 ± 3.1	57.5 ± 3.4	—	—	②③④⑤⑦	7
Li et al. ⁴⁷	China	OSC	LC	50	50	33/17	29/21	57.51 ± 12.58	55.41 ± 10.36	—	—	②④⑤⑦	6
Zhou et al. ⁴⁸	China	OSC	LC	92	43	26/17	36/56	—	—	—	—	—	8
Tao ⁴⁹	China	OSC	LC	28	28	15/13	16/12	39.2 ± 10.5	39.5 ± 9.6	—	—	—	7
Jiang et al. ⁵⁰	China	OSC	LC	45	51	—	—	—	—	—	—	—	6
Sun et al. ⁵¹	China	OSC	LC	21	16	13/8	9/7	—	—	—	—	—	6
Xie et al. ⁵²	China	OSC	LC	20	8	10/10	5/3	55.9 ± 8.8	60.3 ± 12.1	—	—	②④⑤⑦	7
Li et al. ⁵³	China	OSC	LC	58	46	35/23	27/19	—	—	—	—	②③⑤⑦	6
Ao et al. ⁵⁴	China	OSC	LC	216	141	115/101	69/72	40.6 ± 12.9	39.9 ± 11.3	2	39	①④⑤⑦	7
Zhang et al. ⁵⁵	China	OSC	LC	28	18	17/11	10/8	53.9 ± 11.2	54.5 ± 12.1	—	—	①②③④⑤⑦	5
Roueff et al. ⁵⁶	France	OSC	PC	47	57	—	—	—	—	—	—	②③④⑦	5
Abdel Aal et al. ⁵⁷	United States	LC	PC	190	50	77/113	29/21	52.8 ± 4.2	56.3 ± 4.2	92	19	①②③④⑤⑥⑦	7
Dogra ⁵⁸	India	OSC	PC	93	47	31/16	66/27	51.1 ± 13.9	53.8 ± 13.4	-	-	①②④⑤	7

NOS平均6.9分

NOS: Newcastle–Ottawa Scale; LC: laparoscopic catheterization; PC: percutaneous catheterization; OSC: open surgery catheterization; —: no data.

^aOutcomes: ① bleeding; ② exit-site/tunnel infection; ③ 1-year survival; ④ leakage; ⑤ catheter mechanical; ⑥ visceral perforation; ⑦ peritonitis.

步驟 2：系統性文獻回顧的品質如何？(FAITH)

I—是否只納入 (Included) 具良好效度的文章？

僅進行文獻判讀是不足夠，系統性文獻回顧只納入至少要有一項研究結果是極小偏誤的試驗。

在文章的方法章節，可以找到文章評估的方式，以及是由誰完成評估的，在結果章節則會提供審查者意見一致性的程度。

Data extraction and quality evaluation

P.3

Two independent reviewers extracted data to a standardized form and assessed the quality of the included randomized controlled trials (RCTs) according to the Cochrane Collaboration's tool for assessing risk of bias by Higgins and Green.¹⁵ Additionally, we adopted the Newcastle–Ottawa Scale (NOS)¹⁶ to assess the methodological quality of the observational clinical studies. The extracted data included first author, published year, country or area, the total participants, type of intervention, and general demographic characteristics of participants in each group.

Supplemental material

Quality of the included trials was assessed independently by two reviewers according to the Cochrane Collaboration's tool for assessing risk of bias by Higgins (15). Disagreement was resolved by discussions with a third reviewer. Assessing risk of bias for RCTs included sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective outcome reporting, and other potential sources of bias.

評讀結果：是 否 不清楚



步驟 2：系統性文獻回顧的品質如何？(FAITH)

Study quality

P.3

The quality of the included RCTs was limited. Some of the studies had no detailed description about the generation of the random sequence,²⁴ lacked blinding to participants and personnel (performance bias),^{18,22} or lacked blinding to outcome assessment (detection bias)²² (Figure 2). Evaluating by NOS criteria, the enrolled observational clinical studies scored an average of 6.9 points, which indicated medium quality (Table 2).

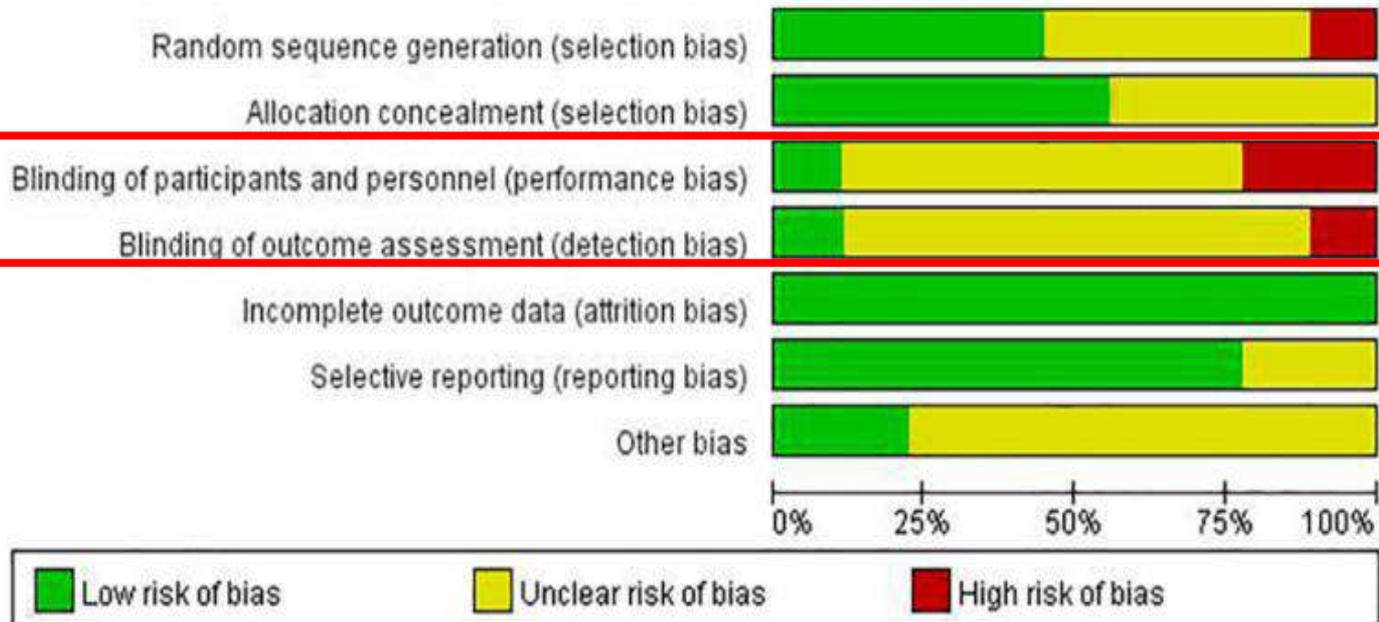


Figure 2. Quality assessment of included RCTs.

步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

應該用至少 1 個摘要表格呈現所納入的試驗結果。若結果相近，可針對結果進行統合分析(meta-analysis)，並以「森林圖」(forest plot)呈現研究結果，最好再加上異質性分析。



步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Table 3. Pairwise meta-analyses summary estimates of randomized controlled trials.

	LC versus PC	PC versus OSC	LC versus OSC
One-year catheter survival			
Number of studies	—	—	2
Pooled estimate, OR (95% CI) I ²	ND	ND	3.90 (0.22, 70.34) 67.5% ^a
Catheter mechanical dysfunction			
Number of studies	1	2	6
Pooled estimate, OR (95% CI) I ²	1.64 (0.70, 3.84) NA	0.67 (0.32, 1.40) 0%	0.31 (0.11, 0.86) 46.5%
Bleeding			
Number of studies	—	—	3
Pooled estimate, OR (95% CI) I ²	ND	ND	3.55 (1.08, 11.71) 0%
Visceral perforation			
Number of studies	—	1	—
Pooled estimate, OR (95% CI) I ²	ND	0.95 (0.06, 15.42) NA	ND
Leakage			
Number of studies	1	2	6
Pooled estimate, OR (95% CI) I ²	2.88 (0.85, 9.81) NA	0.26 (0.03, 2.25) 35.2%	1.30 (0.38, 4.49) 35.1%
Exit-site/tunnel infection			
Number of studies	1	1	4
Pooled estimate, OR (95% CI) I ²	1.34 (0.58, 3.07) NA	0.13 (0.01, 2.52) NA	1.24 (0.55, 2.81) 0%
Peritonitis			
Number of studies	1	1	6
Pooled estimate, OR (95% CI) I ²	1.92 (0.88, 4.21) NA	0.19 (0.04, 0.91) NA	0.87 (0.48, 1.60) 0%

NA: not applicable; ND: no data; OR: odds ratio; CI: confidence interval; I²: inconsistency index.

^aEstimates unreliable because of heterogeneity.

評讀結果：是 否 不清楚

步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

觀察性臨床試驗的薈萃分析

Supplementary Table 1. Pairwise meta-analyses summary estimates of Observational Clinical Trails.

Supplemental material

	LC vs PC	PC vs OSC	LC vs OSC
One-Year Catheter Survival			
Number of studies	2	7	4
Pooled estimate [OR (95% CI) I ²]	0.77 (0.43, 1.38) 0%	0.93 (0.49, 1.78) 78.1%*	0.82 (0.22, 3.02) 76.8%*
Catheter Mechanical Dysfunction			
Number of studies	4	5	17
Pooled estimate [OR (95% CI) I ²]	1.23 (0.77, 1.97) 4.4%	1.65 (0.67, 4.06) 55.1%*	0.19 (0.10, 0.37) 48.6%
Bleeding			
Number of studies	2	5	5
Pooled estimate [OR (95% CI) I ²]	0.32 (0.07, 1.36) 0%	1.68 (0.62, 4.53) 0%	1.76 (0.61, 5.10) 30.2%
Visceral Perforation			
Number of studies	1	-	-
Pooled estimate [OR (95% CI) I ²]	0.09 (0.003, 2.16) NA	ND	ND
Leakage			
Number of studies	4	10	14
Pooled estimate [OR (95% CI) I ²]	0.77 (0.28, 2.13) 47.8%	2.10 (1.40, 3.14) 12.4%	1.04 (0.52, 2.11) 43.4%
Exit-site/tunnel infection			
Number of studies	4	6	13
Pooled estimate [OR (95% CI) I ²]	0.99 (0.65, 1.51) 0%	0.74 (0.40, 1.39) 0%	0.71 (0.43, 1.19) 0%
Peritonitis			
Number of studies	4	6	15
Pooled estimate [OR (95% CI) I ²]	0.96 (0.64, 1.44) 0%	1.16 (0.72, 1.88) 0%	0.78 (0.47, 1.32) 53.0%*

NA = not applicable, ND = no data, OR = odds ratio, 95% CI = 95% Confidence Intervals.

LC = Laparoscopic catheterization; PC = Percutaneous catheterization; OSC = Open surgery catheterization.

*Estimates unreliable because of heterogeneity.

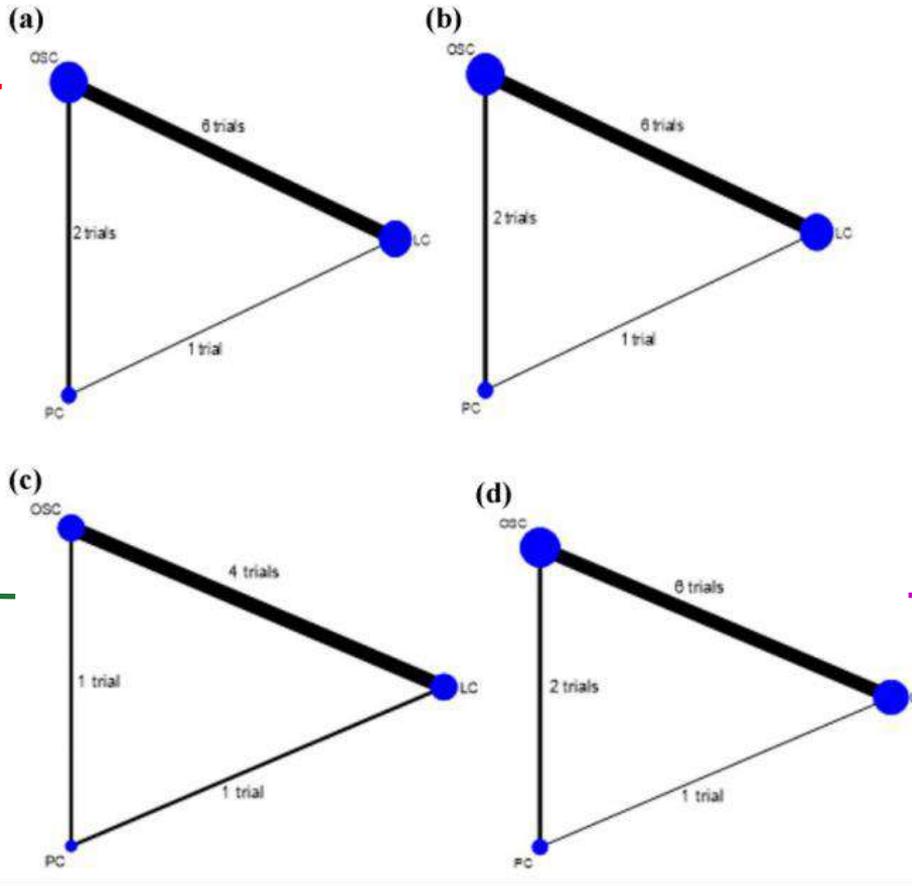


步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Network of the methods for PDC (RCTs)

導管機械
功能障礙



滲漏

出口/
隧道感染

腹膜炎

Figure 3. Network of the methods for PDC: (a) catheter mechanical dysfunction, (b) leakage, (c) exit-site/tunnel infection, and (d) peritonitis. Each node represents different interventions or control group. Size of nodes is proportional to number of studies comparing respective nodes. Increasing thickness of lines between nodes is proportional to number of randomly assigned patients. LC: laparoscopic catheterization; PC: percutaneous catheterization; OSC: open surgery catheterization; PDC: peritoneal dialysis catheter.

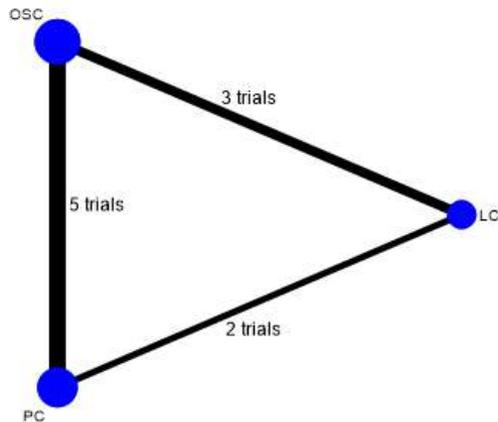
步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

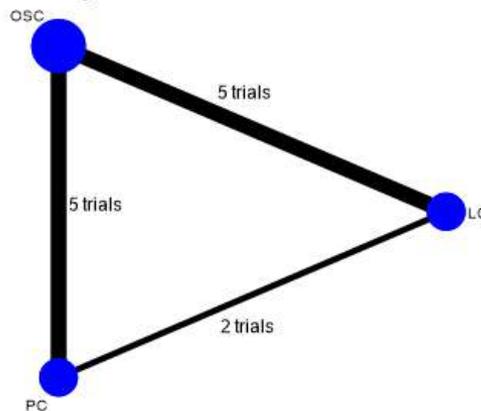
Network of the methods for PDC (clinical trails)

Supplemental material

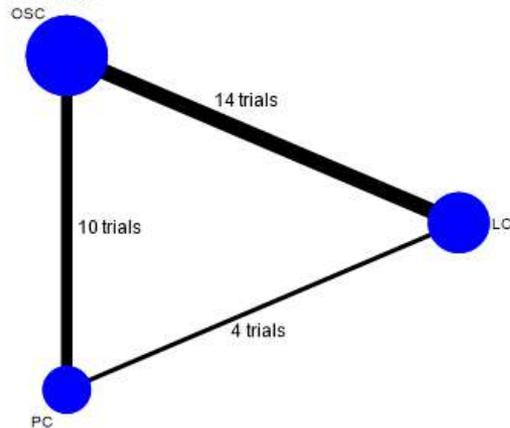
A. One-Year Catheter Survival



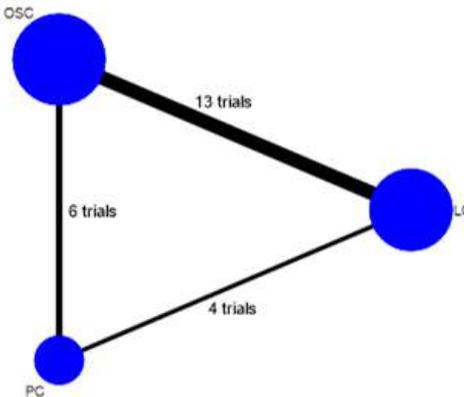
B. Bleeding



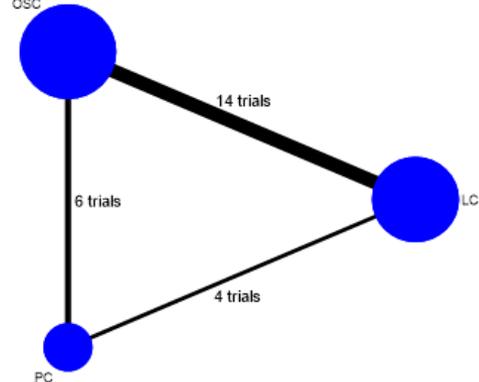
C. Leakage



D. Exit-site/tunnel infection



E. Peritonitis



步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Table 4. NMAs of RCTs.^a

(a) Catheter mechanical dysfunction		
OSC	0.46 (0.20, 1.06)	0.46 (0.20, 1.07)
	LC	1.00 (0.40, 2.47)
		PC
(b) Leakage		
OSC	1.18 (0.53, 2.60)	0.34 (0.11, 1.03)
	LC	0.29 (0.10, 0.80)
		PC
(c) Exit-site/tunnel infection		
OSC	1.09 (0.49, 2.41)	0.71 (0.24, 2.11)
	LC	0.65 (0.29, 1.46)
		PC
(d) Peritonitis		
OSC	0.80 (0.44, 1.46)	0.36 (0.15, 0.90)
	LC	0.45 (0.21, 0.97)
		PC

LC: laparoscopic catheterization; PC: percutaneous catheterization; OSC: open surgery catheterization; OR: odds ratio; CrIs: credible intervals; RCT: randomized controlled trial; NMA: network meta-analysis.

^aResults are OR (95% CrIs) from the NMA between the column defining intervention.



步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Supplemental material

Supplementary Table 2. Network meta-analyses of Observational Clinical Trails

A. One-year catheter survival 沒有證據顯示差異

OSC	1.75(0.90, 3.40)	1.55(0.80, 2.97)
LC	0.88(0.54, 1.44)	
PC		

B. Bleeding 沒有證據顯示差異

OSC	1.49(0.56, 3.94)	2.31(0.85, 6.30)
LC	1.55(0.49, 4.93)	
PC		

C. Leakage

OSC	1.25(0.74, 2.09)	2.12(1.30, 3.46)
LC	1.70(0.92, 3.13)	
PC		

D. Exit-site/tunnel infection 沒有證據顯示差異

OSC	0.72(0.47, 1.10)	0.73(0.46, 1.15)
LC	1.02(0.70, 1.48)	
PC		

E. Peritonitis 沒有證據顯示差異

OSC	1.04(0.71, 1.52)	1.12(0.74, 1.69)
LC	1.07(0.71, 1.61)	
PC		

LC = Laparoscopic catheterization; PC = Percutaneous catheterization; OSC = Open surgery catheterization.

[Results are odds ratios (95% credible intervals) from the network meta-analysis between the columns defining intervention.]

PC與OSC相比，可能會增加滲漏的發生率
2.12 (1.30–3.46)



步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Table 5. SUCRA values for RCTs.^a

	OSC	LC	PC
Catheter mechanical dysfunction	3.4	73.1	73.4
Leakage	34.3	17.5	98.2
Exit-site/tunnel infection	42.4	28.6	78.9
Peritonitis	12.7	39	97.1

SUCRA: surface under the cumulative ranking; LC: laparoscopic catheterization; PC: percutaneous catheterization; OSC: open surgery catheterization; RCT: randomized controlled trial.

^aLarger SUCRA values indicate better interventions and higher hierarchy ranks.

成效排名：SUCRA 值最大，
代表發生率最低。



步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Supplemental material

Supplementary Table 3. SUCRA values for Observational Clinical Trails

	OSC	LC	PC
One-Year Catheter Survival	17.2	92.2	40.5
Bleeding	87.0	49.1	14.0
Leakage	89.8	57.8	2.4
Exit-site/tunnel infection	8.1	73.7	68.2
Peritonitis	64.5	52.1	33.4

成效排名：SUCRA 值最大，
代表發生率最低。

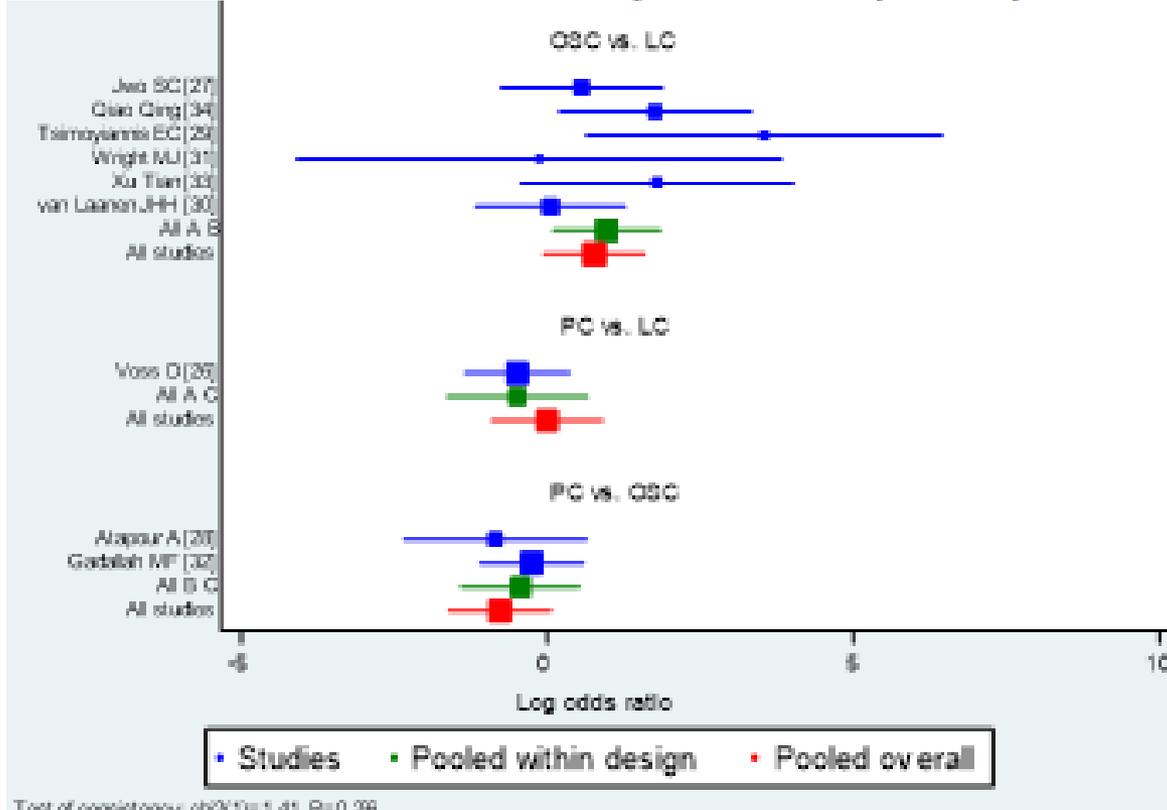


步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

應該用至少 1 個摘要表格呈現所納入的試驗結果。若結果相近，可針對結果進行統合分析(meta-analysis)，並以「森林圖」(forest plot)呈現研究結果，最好再加上異質性分析

1a. Catheter mechanical dysfunction(RCTs)



導管機械功能障礙：
 $I^2 < 50\%$ ，
 $p = 0.24$ ，
無顯著差異。

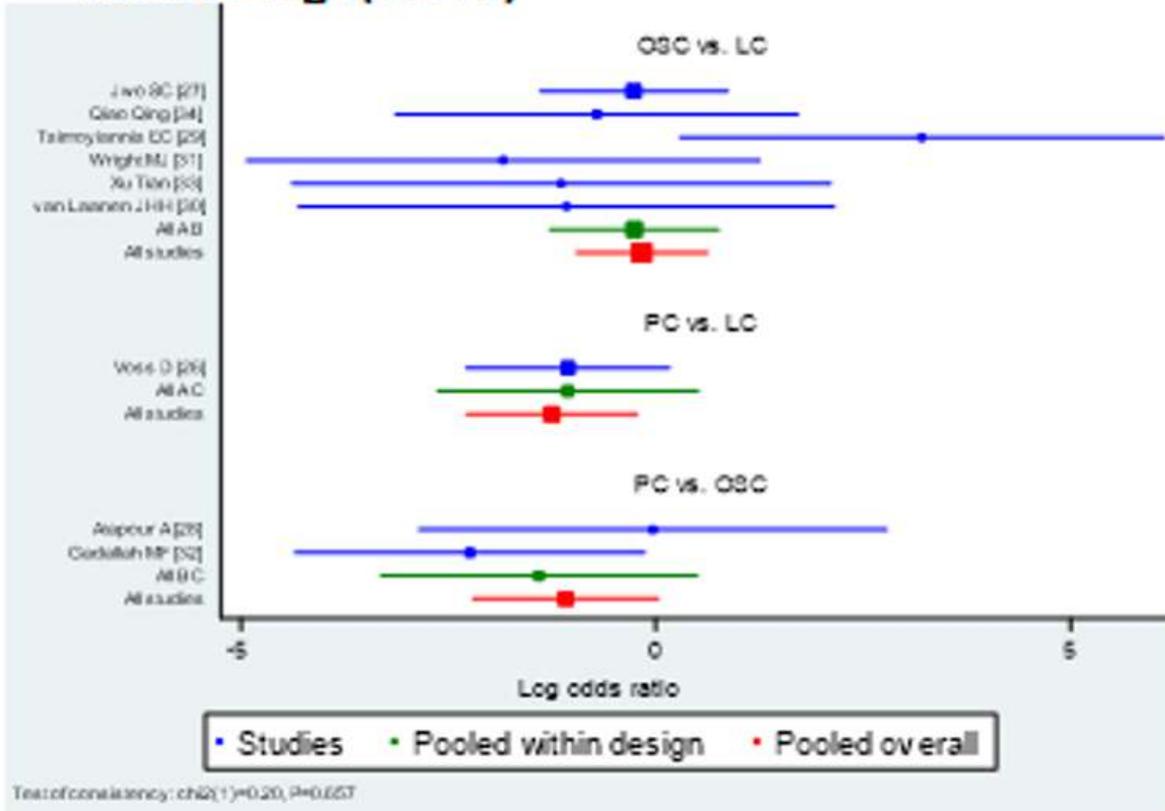
Test of consistency: chi2(1)=1.41, P=0.28

步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

應該用至少 1 個摘要表格呈現所納入的試驗結果。若結果相近，可針對結果進行統合分析(meta-analysis)，並以「森林圖」(forest plot)呈現研究結果，最好再加上異質性分析

1b. Leakage(RCTs)



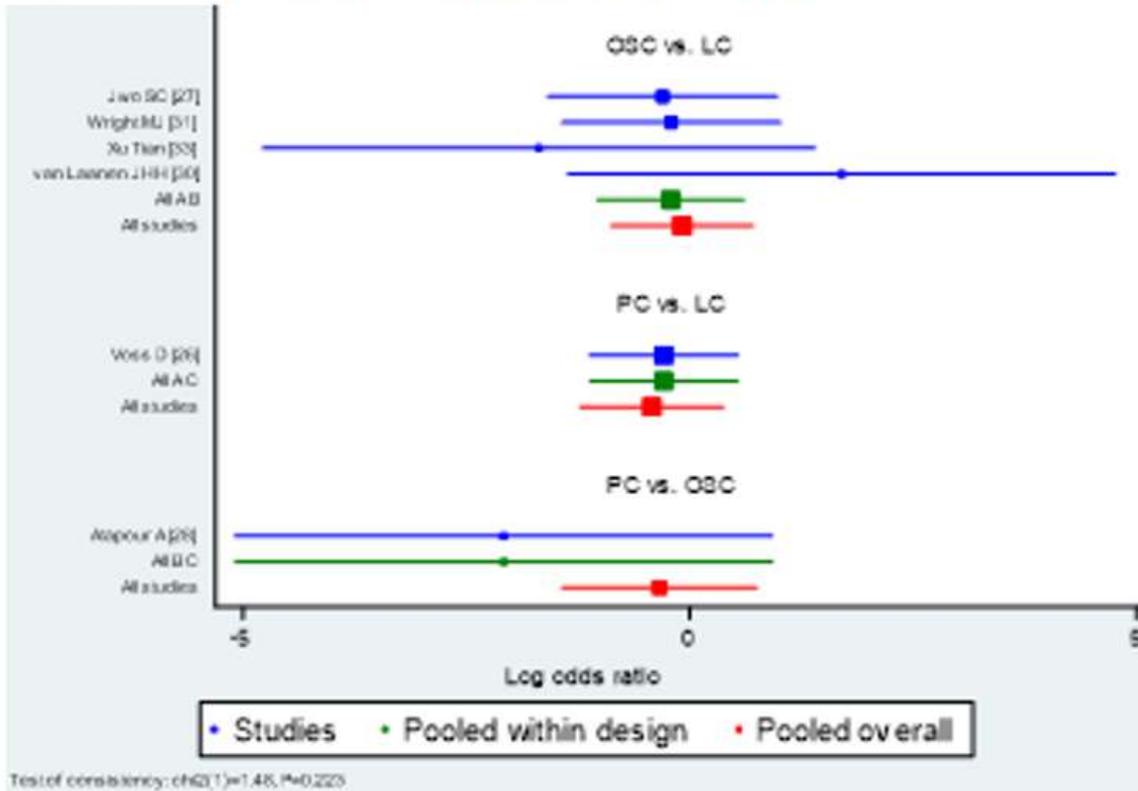
滲漏：
 $I^2 < 50\%$ ，
 $p = 0.66$ ，
無顯著差異。

步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

應該用至少 1 個摘要表格呈現所納入的試驗結果。若結果相近，可針對結果進行統合分析(meta-analysis)，並以「森林圖」(forest plot)呈現研究結果，最好再加上異質性分析

1c. Exit-site/tunnel infection(RCTs)



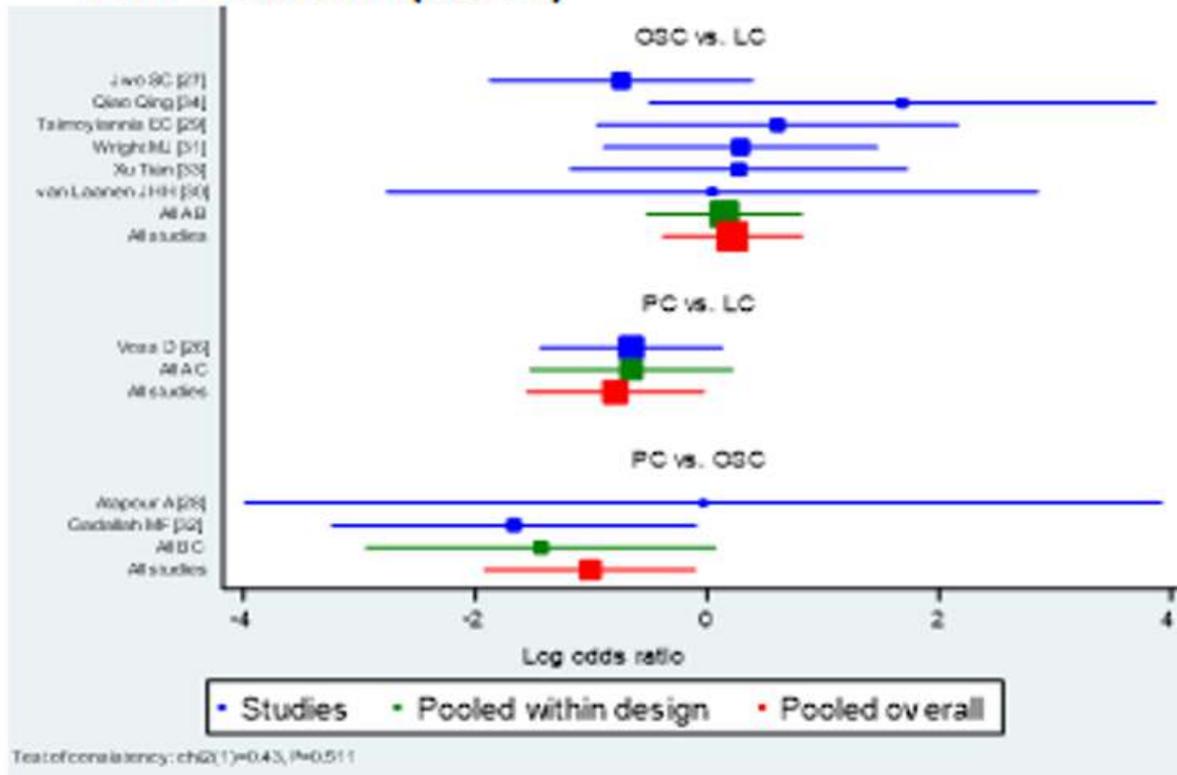
出口/隧道感染：
 $I^2=0\%$ ，
 $p=0.22$ ，
無顯著差異。

步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

應該用至少 1 個摘要表格呈現所納入的試驗結果。若結果相近，可針對結果進行統合分析(meta-analysis)，並以「森林圖」(forest plot)呈現研究結果，最好再加上異質性分析

1d. Peritonitis(RCTs)



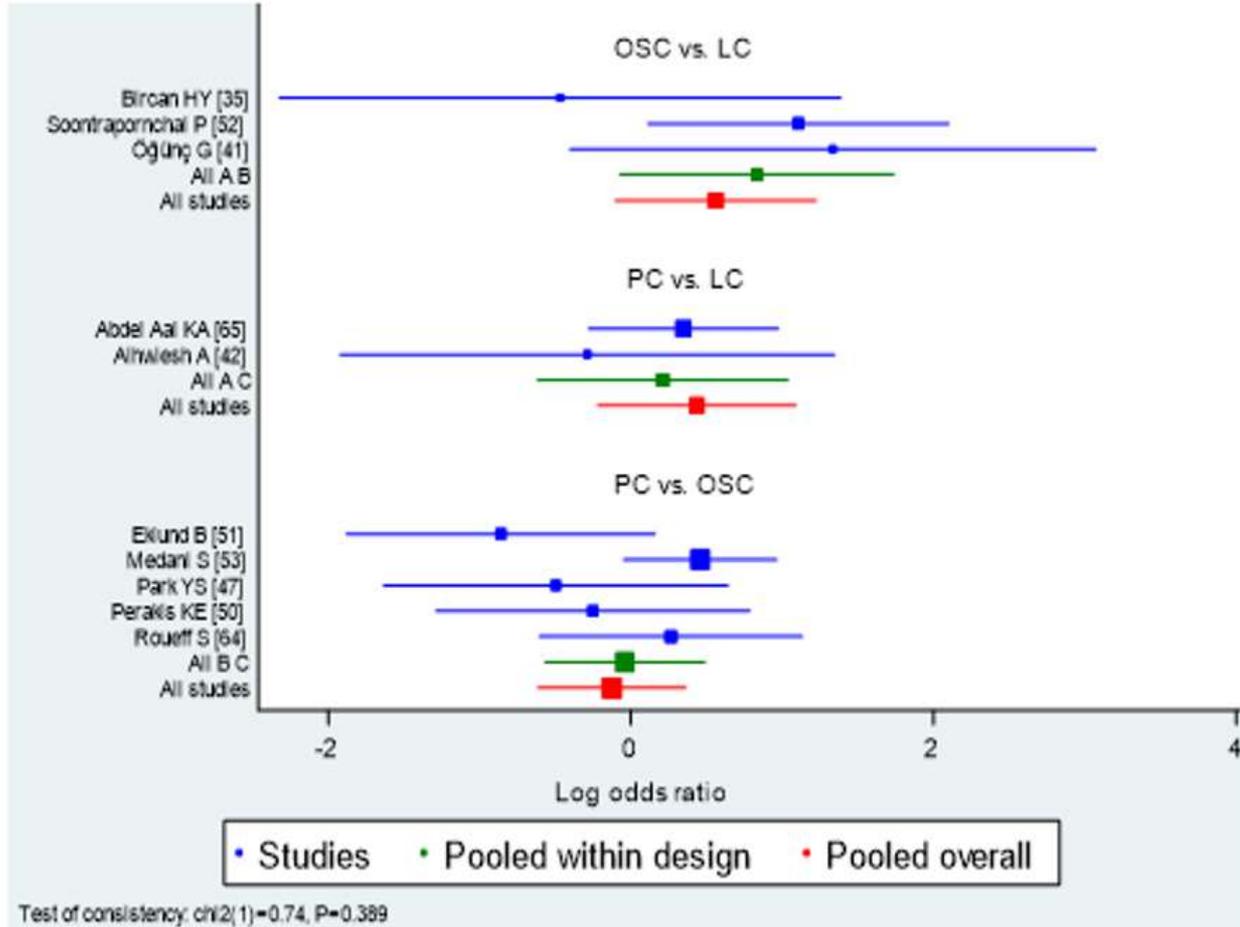
腹膜炎：
 $I^2=0\%$ ，
 $p=0.51$ ，
無顯著差異。

步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

2a. One-year catheter survival(Observational Clinical Trials)

Supplemental material



- 一年導管存活率：薈萃分析顯示存在異質性。在進行了敏感性分析，發現三項研究是異質性的最終主要原因。
- 排除異質性研究後， $p=0.39$ ，無顯著差異。

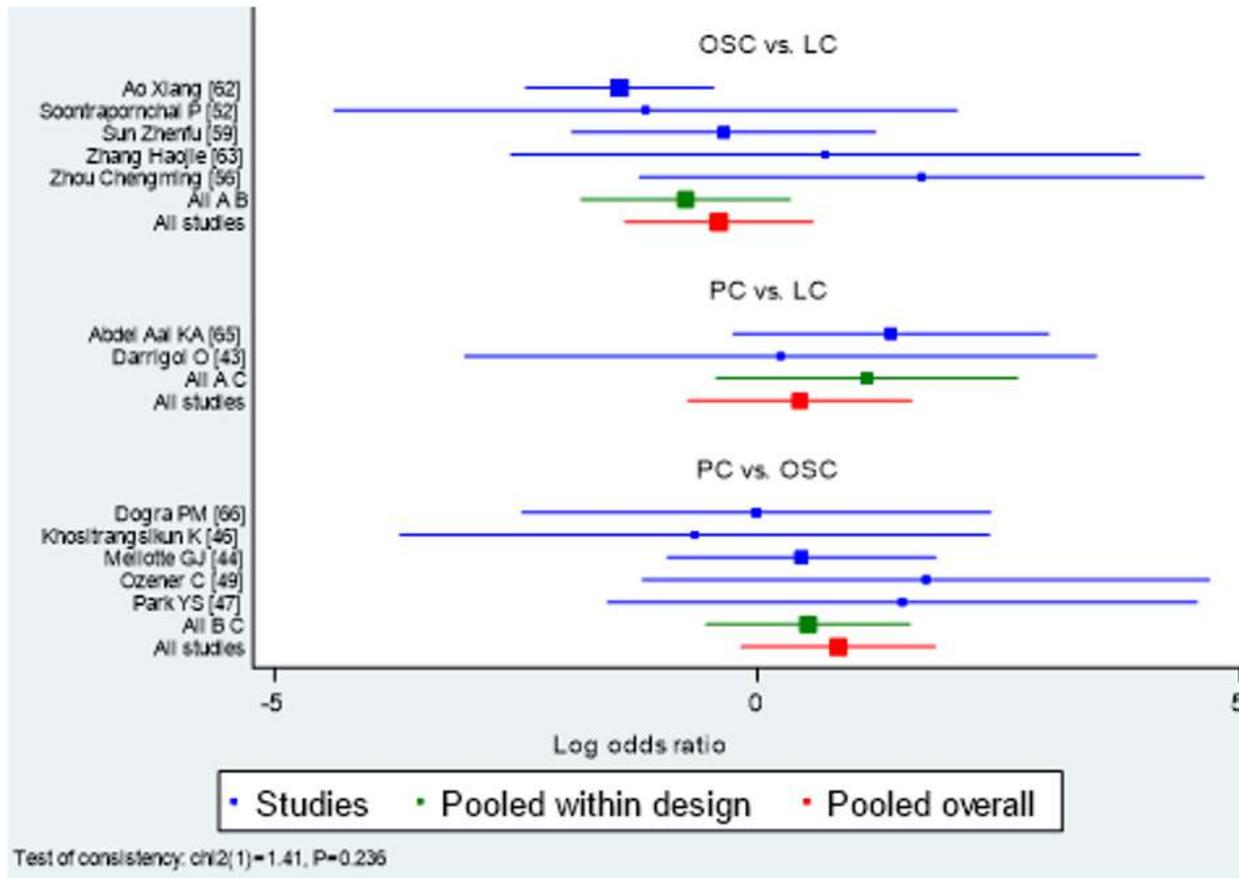


步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Supplemental material

2b. Bleeding(Observational Clinical Trials)



出血：
 $I^2 < 50\%$ ，
 $p=0.24$ ，
無顯著差異。

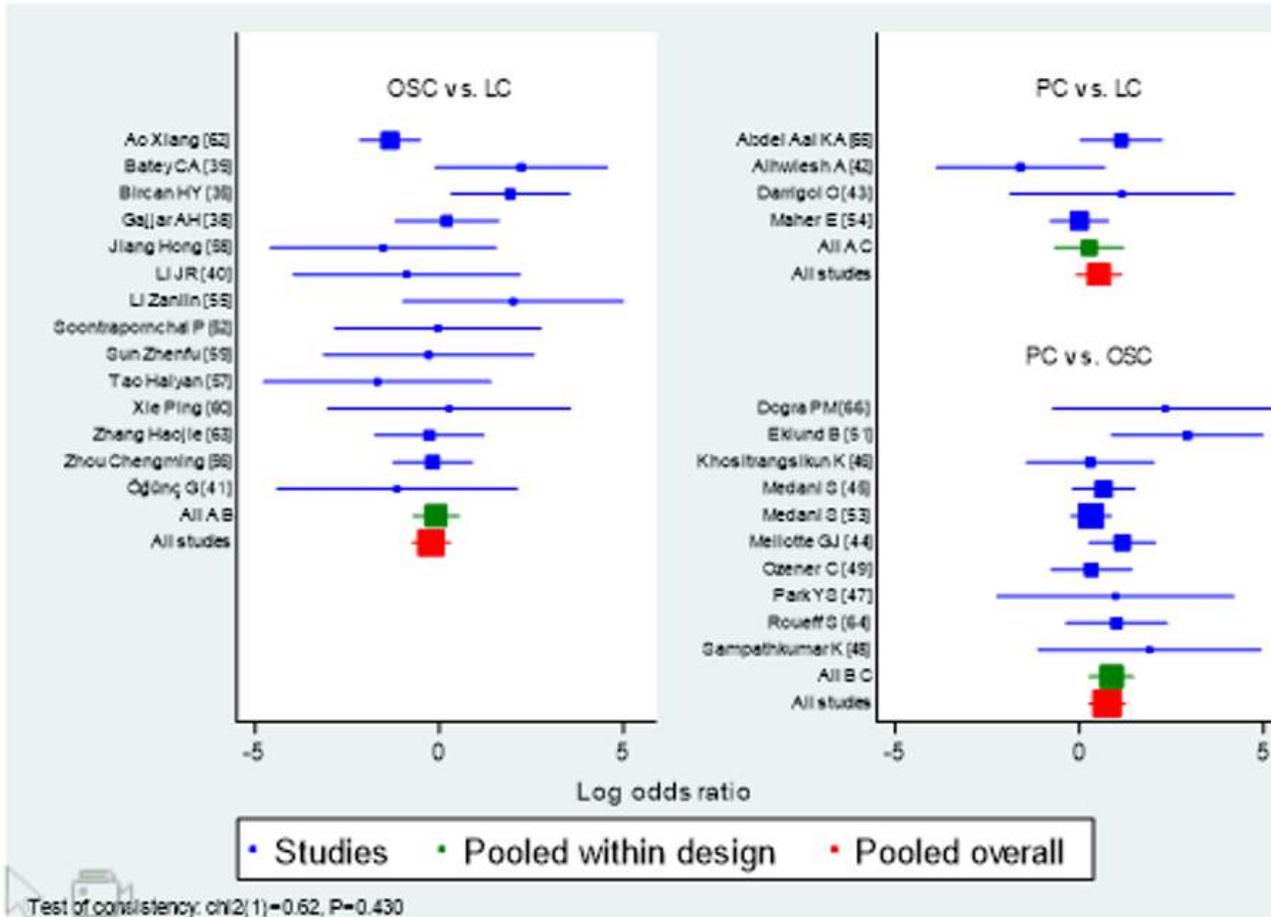


步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

2c. Leakage(Observational Clinical Trials)

Supplemental material



滲漏：
 $I^2 < 50\%$ ，
 $p=0.43$ ，
無顯著差異。

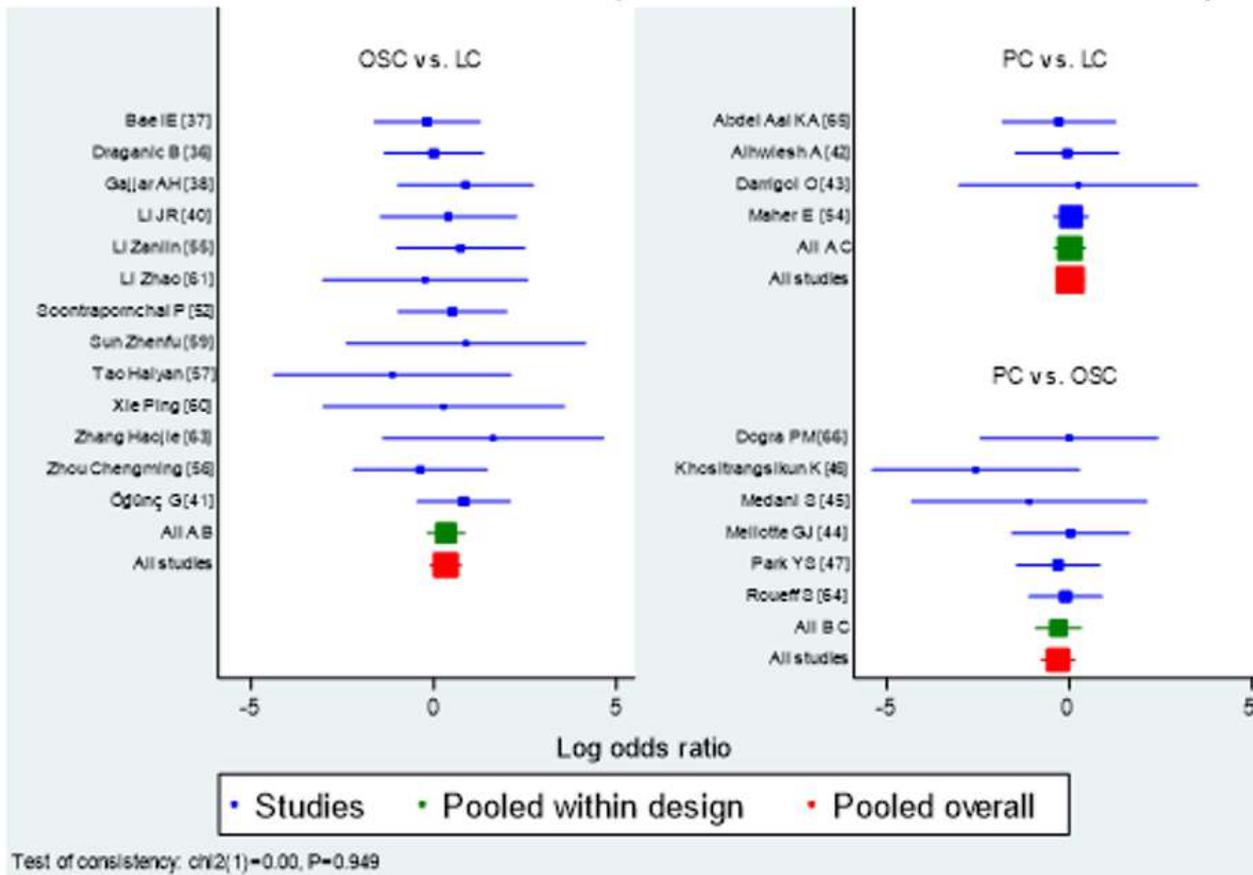


步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

Supplemental material

2d. Exit-site/tunnel infection(Observational Clinical Trials)



出口/隧道感染：
 $I^2 < 50\%$ ，
 $p=0.95$ ，
 無顯著差異。

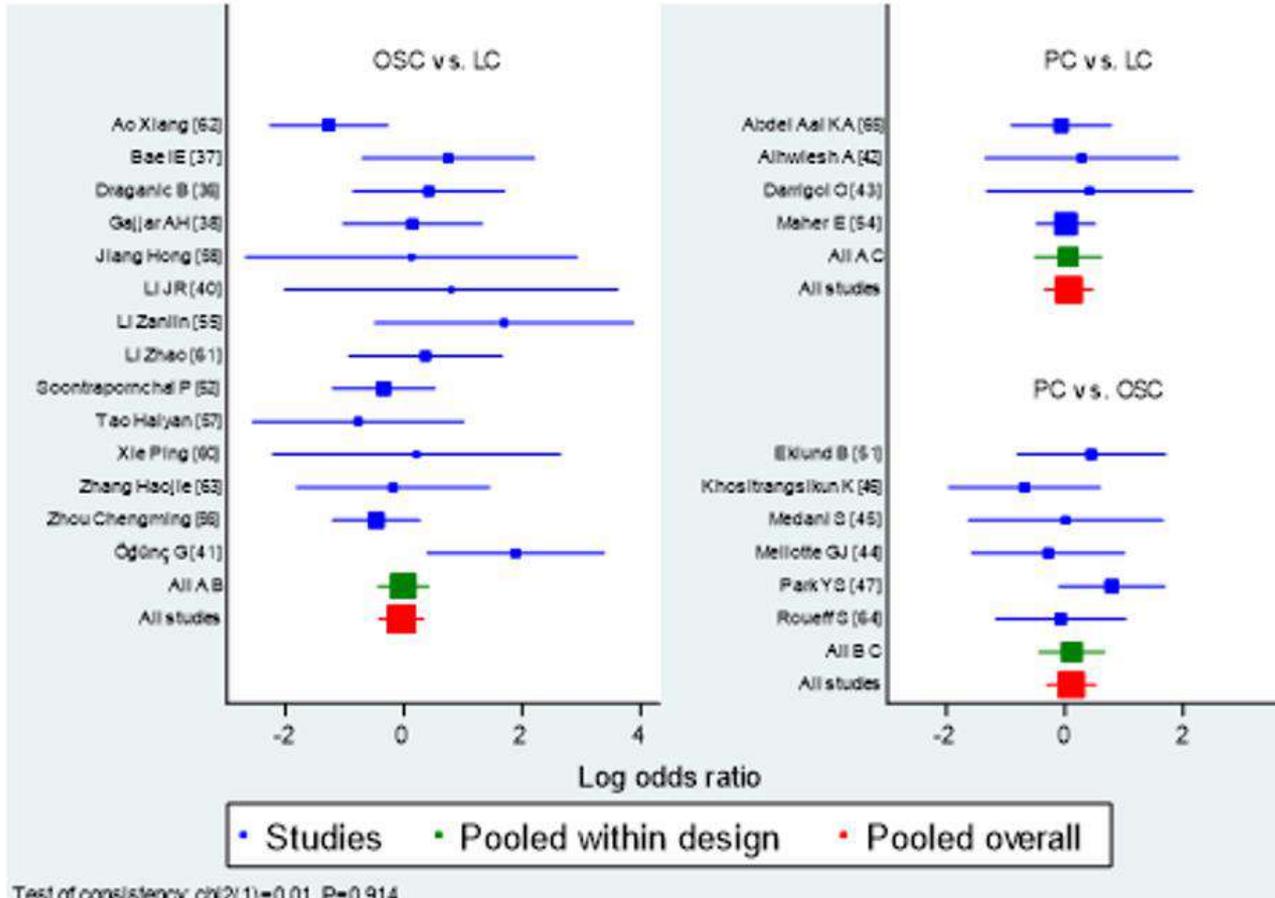


步驟 2：系統性文獻回顧的品質如何？(FAITH)

T—作者是否以表格和圖表「總結」(Total up) 試驗結果？

2e. Peritonitis(Observational Clinical Trials)

Supplemental material



- 腹膜炎：
薈萃分析顯示存在異質性。在進行了敏感性分析，發現一項研究是異質性的主要原因。
- 排除異質性研究後， $p=0.91$ ，無顯著差異。



步驟 2：系統性文獻回顧的品質如何？(FAITH)

H—試驗的結果是否相近—異質性 (Heterogeneity) ？

在理想情況下，各個試驗的結果應相近或具同質性，若具有異質性，作者應評估差異是否顯著(卡方檢定)。根據每篇個別研究中不同的 PICO及研究方法，探討造成異質性的原因。

在文章的結果章節，可以找到研究結果是否具異質性，及造成異質性可能的原因探討。森林圖中可以找到異質性的卡方檢定結果。

There were some limitations in this NMA. **First**, heterogeneity was high owing to (1) variation in the included patient populations across studies, differences in sample size and follow-up, and various time points to report the outcomes (such as catheter survival rate); and (2) the percutaneous group included X-ray fluoroscopy puncture, ultrasound-guided puncture, and blinded percutaneous puncture catheterization. To compensate for this effect, we adopted a random effect model, which rendered more conservative results in situations where significant heterogeneity occurred. **Second**, RCTs were very limited. Only one RCT comparing PC with LC and two RCTs comparing PC with OSC are available at present. **Thirdly**, the quality of enrolled RCTs was very limited, especially in blinding method and randomization procedures, which may result in selective bias. Therefore, RCTs comparing all the catheterization methods with larger scale and higher quality are needed to obtain more credible evidence.

P.8

結果為何？

使用何種評估方式，療效有多大（是否來自隨機效果）？

- 本篇所納入之研究經network meta-analysis(NMA)分析結果顯示LC可能具有植入後最好的1年導管存活率。PC和LC可能比OSC更有效地降低機械功能障礙。OSC的出血發生率最低。
- 這項研究是第一個使用NMA分析方法比較腹膜透析導管的各種植管技術。還包括了觀察性臨床試驗，由於相關RCT數量有限，作者認為大多數納入的文獻存在較高風險的偏差，證據不足，建議仍需要進一步的研究，以獲得更可信的證據。



FAITH 系統性文獻回顧快速評讀表



植管手術差異性

模式	open surgery	Laparoscopic	percutaneous
適合族群	無日常排程壓力者	無日常排程壓力者 腹部手術病史者	不方便請假者 心肺功能不佳 無法全身麻醉者
手術時間	約1小時	包含術前麻醉與恢復約需2小時	依據病人狀況 約30~60分鐘
住院時間	住院3~14天	住院3~14天	依據病人狀況 門診手術、 住院3天
麻醉類型	半身/全身麻醉	全身麻醉	局部麻醉
傷口大小	約5~7cm	約2cm	約2cm
術後進入 透析治療時間	傷口復原約10~14 天	傷口復原約10~14 天	傷口復原約2~3天 隔天即可灌液





臺北市立萬芳醫院
-委託財團法人臺北醫學大學辦理-

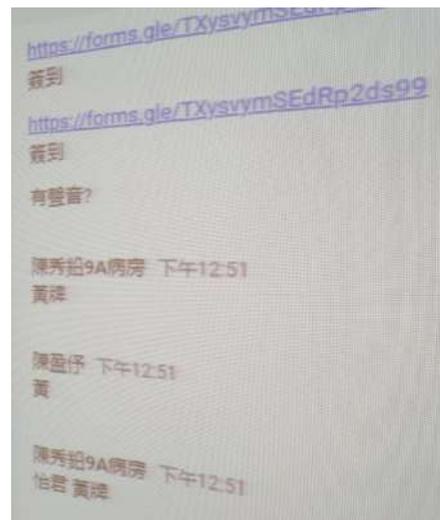
臨床運用





您是否認為經皮導管置入腹膜透析管路，可以減少腹膜透析病人植管併發症？

- 同意：1
- 待評估：15
- 不同意：1





臺北市立萬芳醫院
-委託財團法人臺北醫學大學辦理-

感謝聆聽 敬請指導

