Evidence-based medicine

實證醫學競賽

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參賽編號：A

臨床情境

林女士55歲有高血壓、第二型糖尿病，雖然藥物控制但成效差，已至末期腎臟病變，最近 eGFR 15 ml/min/1.73m2，醫師已告知可能要做透析治療準備，其因要工作一直無法接受以後要過每週透析三次之生活。近日不適噁心、嘔吐、四肢腫脹，今天呼吸喘，漸漸嗜睡，由家屬送至急診，檢查結果醫師建議要緊急做透析治療。其在唸醫學院三年級的兒子很憂心問醫師：「現在要緊急透析一定要用血液透析（HD）嗎？不可以用腹膜透析（PD）嗎？」、「如果可以用腹膜透析，是否預防性給予抗生素可以減少腹膜炎發生？」、「透析要用抗凝血劑，是否發生中風之風險較高？血液透析與腹膜透析發生中風的風險有何不同？」、「我媽媽還年輕若考量長期做血液透析，動靜脈瘻管很重要，我去實習時有看到病人用遠紅外線照射，此處置是否可以維持血液透析病人動靜脈瘻管的通暢性？」

醫療團隊關心的問題

- 血液透析和腹膜透析治療效果
- 預防性療法
- 成本效益

病人關心的問題

- 血液透析和腹膜透析差別
- 腹膜炎發生機會
- 中風發生機會
- 遠紅外線治療

背景知識

- **CKD**: kidney damage **or** decreased kidney function **for three or more months**

- **Complications:** cardiovascular disease, infection, malignancy, and mortality

背景知識

Chronic kidney disease classification based upon glomerular filtration rate and albuminuria

GFR stages	GFR (mL/min/1.73 m^2)	Terms
G1	≥90	Normal or high
G2	60 to 89	Mildly decreased
G3a	45 to 59	Mildly to moderately decreased
G3b	30 to 44	Moderately to severely decreased
G4	15 to 29	Severely decreased
G5	<15	Kidney failure (add D if treated by dialysis)
Albuminuria stages	**AER (mg/day)**	**Terms**
A1	<30	Normal to mildly increased (may be subdivided for risk prediction)
A2	30 to 300	Moderately increased
A3	>300	Severely increased (may be subdivided into nephrotic and nonnephrotic for differential diagnosis, management, and risk prediction)

The cause of CKD is also included in the KDIGO revised classification but is not included in this table.

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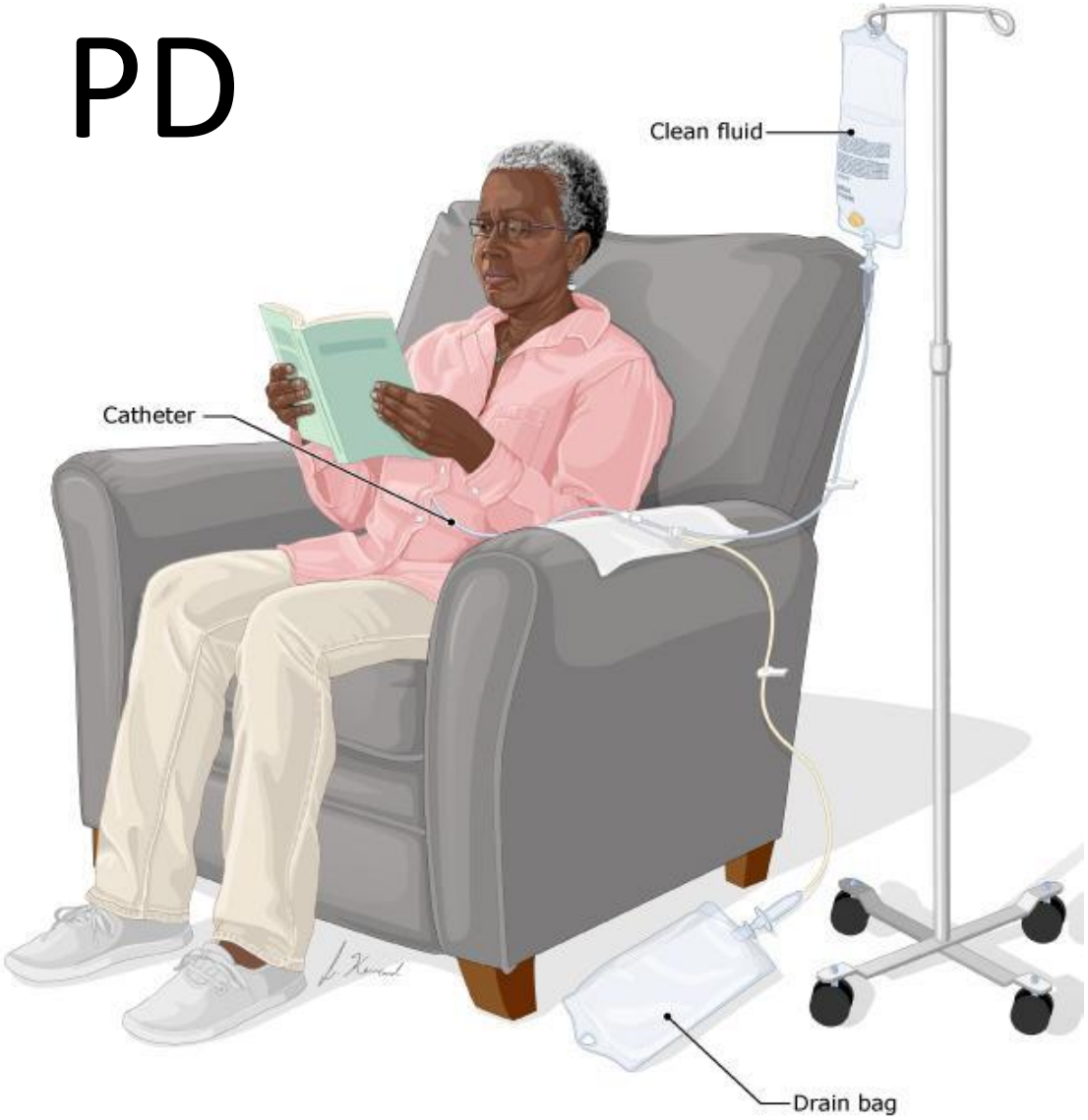
Indications for dialysis

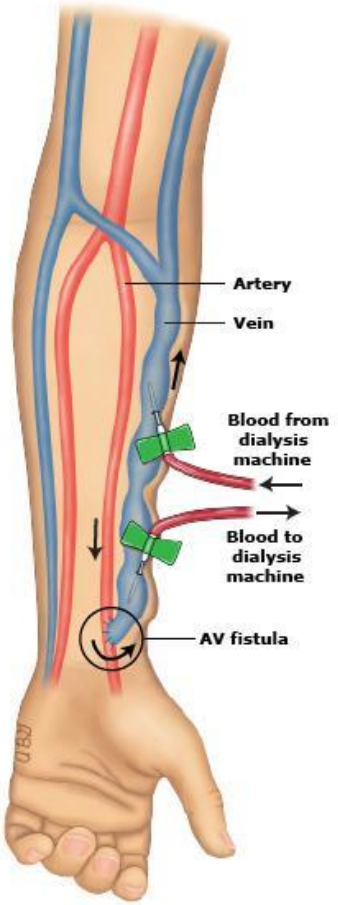
-Pericarditis or pleuritis (urgent indication).
-Progressive uremic encephalopathy or neuropathy (urgent indication).
-A clinically significant bleeding diathesis attributable to uremia (urgent indication).
-Fluid overload refractory to diuretics.
-Hypertension poorly responsive to antihypertensive medications.
-Persistent metabolic disturbances that are refractory to medical therapy.
-Persistent nausea and vomiting.
-Evidence of malnutrition.
-Decreased attentiveness and cognitive tasking (relative indication).
-Depression, persistent pruritus, or the restless leg syndrome (relative indications).

背景知識

PD



HD



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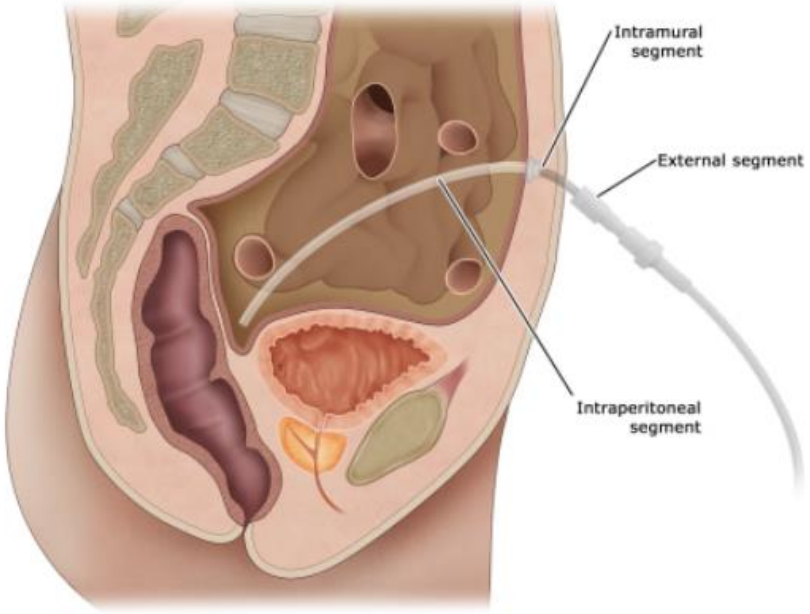
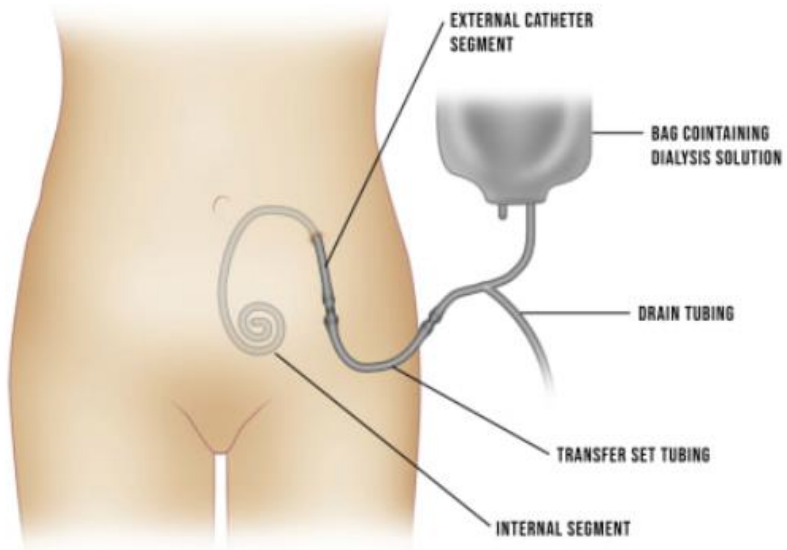
背景知識



Peritoneal dialysis



Peritoneal dialysis

DynaMed®

I. 透析起始時機

I.1: 開始長期透析之適應症

指引-I.1.1: 絕對適應症：肌酐酸廓清率 Ccr < 5 ml/min或血清肌酐酸 Cr > 8.0 mg/dl

指引-I.1.2: 相對適應症：重度慢性腎衰竭肌酐酸廓清率 Ccr < 15 ml/min或血清肌酐酸 Cr > 6.0 mg/dl 且伴有下列任何一種併發症者

伴隨症狀：1.心臟衰竭或肺水腫 2.心包膜炎 3.出血傾向 4.神經症狀：意識障礙，抽搐或末稍神經病變 5.高血鉀(藥物難以控制) 6.噁心、嘔吐(藥物難以控制) 7.嚴重酸血症(藥物難以控制) 8.惡病體質(cachexia) 9.重度氮血症 (BUN > 100 mg/dl)【註：重度慢性腎衰竭之定義為兩側腎臟顯著萎縮(多囊腎例外)或慢性腎衰竭為期至少三個月且腎功能逐漸衰退者】

說明：

本條文內容係依據當前台灣地區健保審核是否發給病患「尿毒症需長期透析」之適應症。

5A-1
Ask
提出問題

根據臨床問題形成第一個PICO

P	Chronic Kidney Disease
I	Urgent peritoneal dialysis
C	Urgent hemodialysis
O	Survival、Mortality、Adverse event

治療型問題

□治療/預防型問題　□診斷型問題　□預後型問題　□傷害/病因型問題

根據臨床問題形成第二個PICO

P	Chronic Kidney Disease with PD
I	Antibiotics
C	Placebo
O	Peritonitis、Mortality、Adverse event

預防型問題

□治療/預防型問題　□診斷型問題　□預後型問題　□傷害/病因型問題

5A-2
Acquire
搜尋資料

檢索策略

	keyword / free text	MeSH terms	中文
P	Chronic Kidney Disease	" Kidney Failure, Chronic" [MeSH Terms]	慢性腎疾病
I	Peritoneal dialysis	"peritoneal dialysis"[MeSH Terms]	腹膜透析
C	Hemodialysis	"hemodialysis"[MeSH Terms]	血液透析
O	Survival Mortalily Adverse event	"mortality"[MeSH Terms] "survival"[MeSH Terms]	生存率 死亡率 副作用

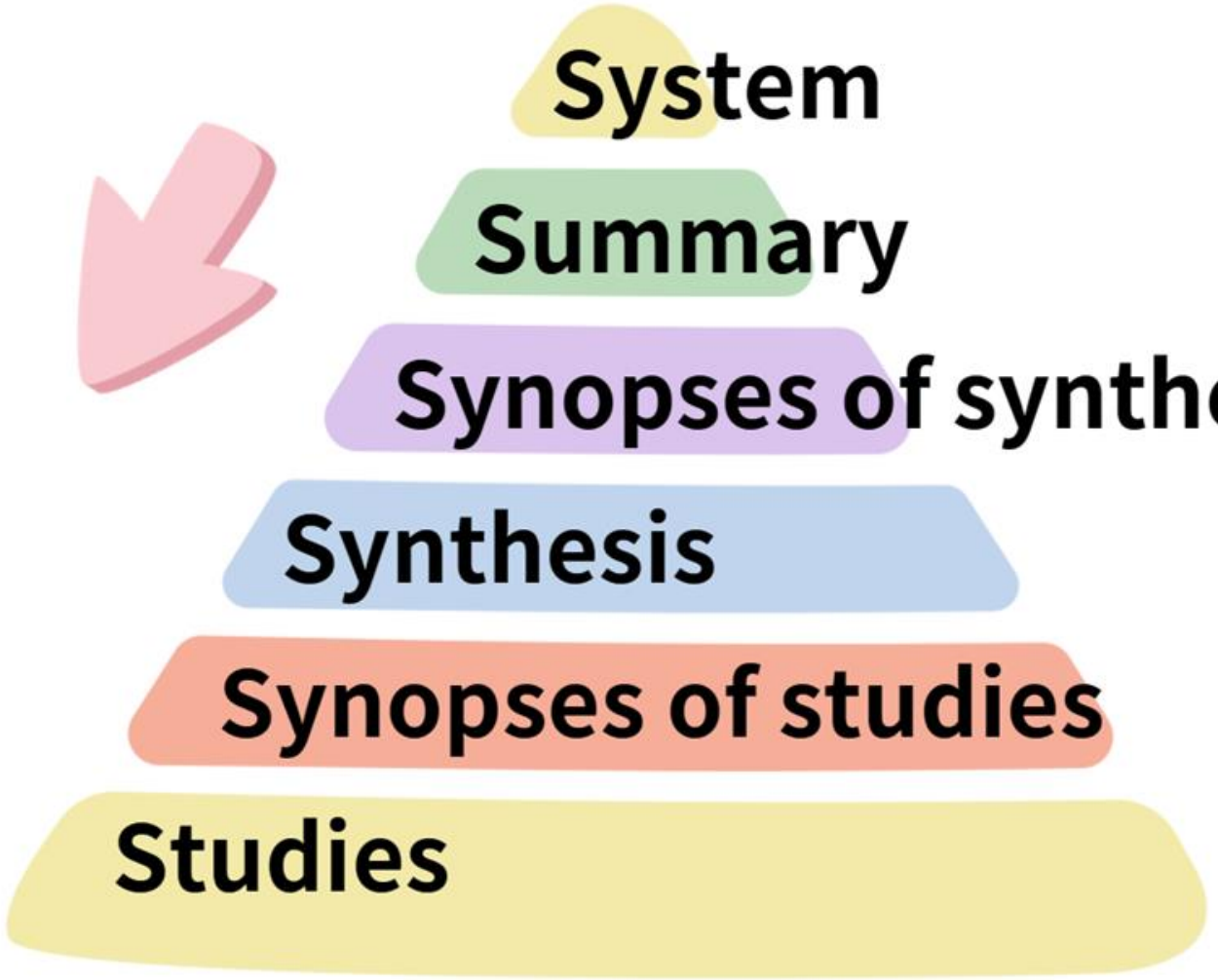
檢索策略

首選Level1：
SR of RCT

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1 (Level 1*)	Step 2 (Level 2*)	Step 3 (Level 3*)	Step 4 (Level 4*)	Step 5 (Level 5)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review of surveys that allow matching to local circumstances**	Local non-random sample**	Case-series**	n/a
Is this diagnostic or monitoring test accurate? (Diagnosis)	Systematic review of cross sectional studies with consistently applied reference standard and blinding	Individual cross sectional studies with consistently applied reference standard and blinding	Non-consecutive studies, or studies without consistently applied reference standards**	Case-control studies, or "poor or non-independent reference standard**	Mechanism-based reasoning
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-control studies, or poor quality prognostic cohort study**	n/a
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or *n*-of-1 trials	Randomized trial or observational study with dramatic effect	Non-randomized controlled cohort/follow-up study**	Case-series, case-control studies, or historically controlled studies**	Mechanism-based reasoning
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, *n*-of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect	Non-randomized controlled cohort/follow-up study (post-marketing surveillance) provided there are sufficient numbers to rule out a common harm. (For long-term harms the duration of follow-up must be sufficient.)**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or *n*-of-1 trial	Randomized trial or (exceptionally) observational study with dramatic effect			
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial	Non -randomized controlled cohort/follow-up study**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning

資料庫



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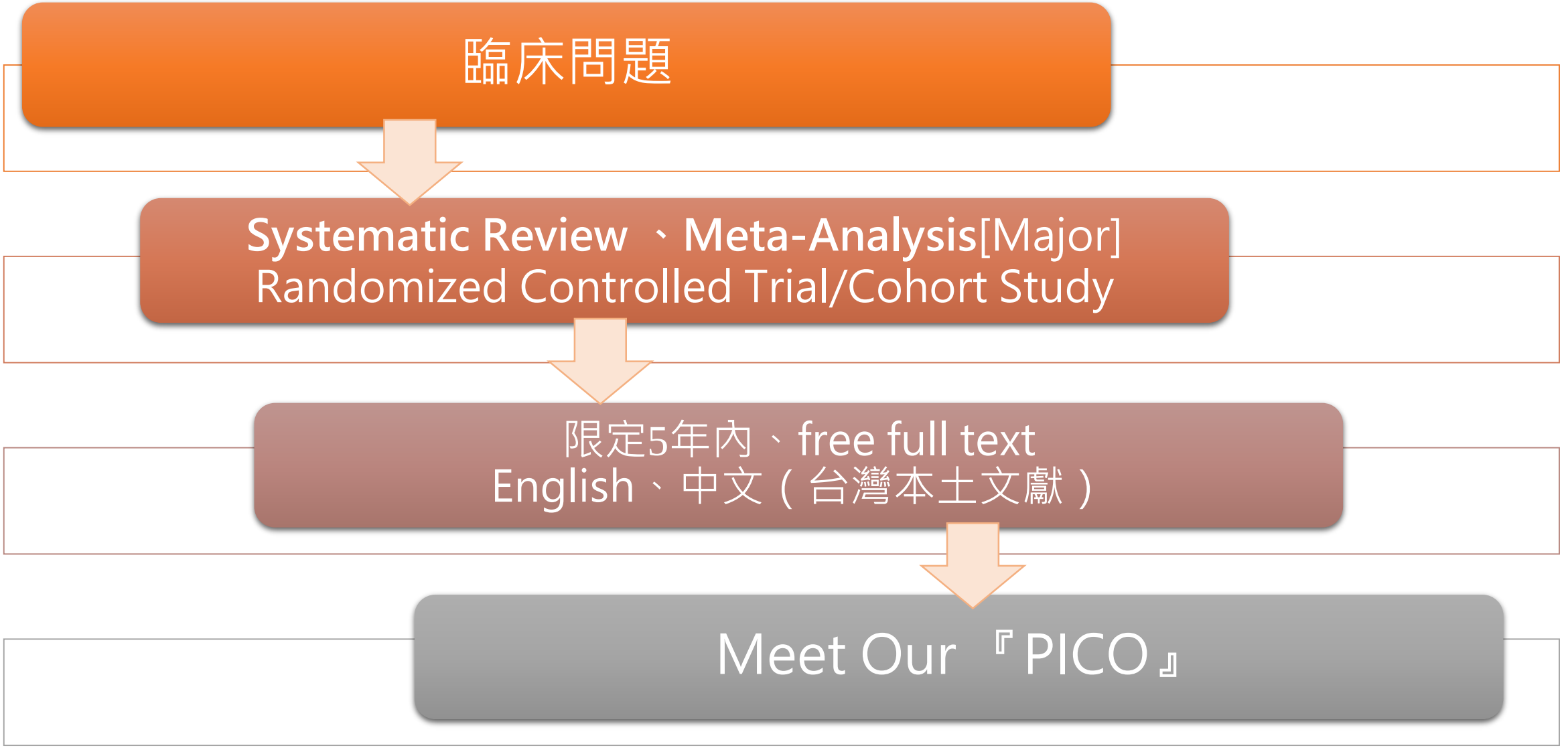
搜尋策略


臨床問題
Systematic Review 、Meta-Analysis[Major]
Randomized Controlled Trial/Cohort Study
限定5年內、free full text
English、中文（台灣本土文獻）
Meet Our 『PICO』

搜尋

Cochrane Library

Access provided by: **National Taiwan University**

Search | Search manager | Medical terms (MeSH) | PICO search

About | ? Search help

Enter a search term and select a PICO vocabulary term from the dropdown

−	Chronic Kidney Disease	Lookup	◉ Population ○ Outcome
−	AND Peritoneal Dialysis	Lookup	○ Population ◉ Intervention ○ Comparison ○ Outcome
−	AND Hemodialysis	Lookup	○ Population ○ Intervention ◉ Comparison ○ Outcome
+			

Clear All | Run search

輸入關鍵字
『Chronic Kidney Disease、Peritoneal Dialysis、Hemodialysis』
適當使用布林運算『AND』、『OR』
不限語言類型地區

搜尋

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使用Limit功能
限定「Review」文章
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Cochrane Reviews
1

1 results matching '**Population** "Chronic Kidney Disease" AND **Intervention** "Peritoneal Dialysis" AND **Comparison** "Hemodialysis"'
19, December 2023

☐ Select all (1) Export selected citation(s) Show all PICOs

Order By Relevancy Results per page 25

1 ☐ Urgent-start peritoneal dialysis versus haemodialysis for people with chronic kidney disease
ShowPICOs 27 January 2021

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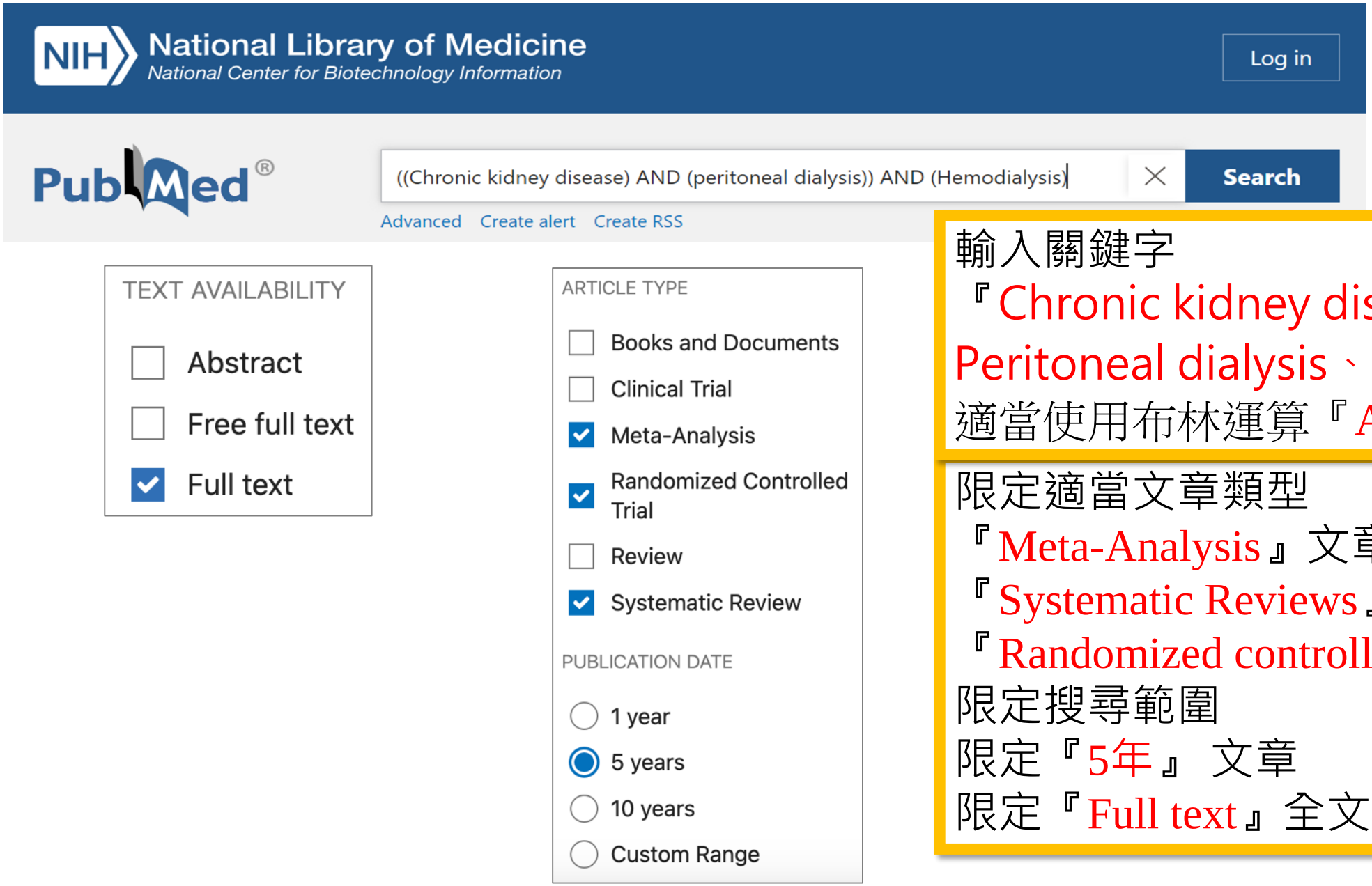
搜尋 PubMed



輸入關鍵字
『Chronic kidney disease、Peritoneal dialysis、Hemodialysis』
適當使用布林運算『AND』、『OR』

限定適當文章類型
『Meta-Analysis』文章
『Systematic Reviews』文章
『Randomized controlled Trial』文章
限定搜尋範圍
限定『5年』文章
限定『Full text』全文可供評讀

搜尋 PubMed

Search	Actions	Details	Query	Results	Time
#13	•••		Search: **((Chronic kidney disease) AND (peritoneal dialysis)) AND (Hemodialysis)** Filters: **Full text, Meta-Analysis, Randomized Controlled Trial, Systematic Review, in the last 5 years** (("renal insufficiency, chronic"[MeSH Terms] OR ("renal"[All Fields] AND "insufficiency"[All Fields] AND "chronic"[All Fields]) OR "chronic renal insufficiency"[All Fields] OR ("chronic"[All Fields] AND "kidney"[All Fields] AND "disease"[All Fields]) OR "chronic kidney disease"[All Fields]) AND ("peritoneal dialysis"[MeSH Terms] OR ("peritoneal"[All Fields] AND "dialysis"[All Fields]) OR "peritoneal dialysis"[All Fields]) AND ("haemodialysis"[All Fields] OR "renal dialysis"[MeSH Terms] OR ("renal"[All Fields] AND "dialysis"[All Fields]) OR "renal dialysis"[All Fields] OR "hemodialysis"[All Fields])) AND ((y_5[Filter]) AND (meta-analysis[Filter] OR randomizedcontrolledtrial[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (2018:2023[pdat])) **Translations** **Chronic kidney disease:** "renal insufficiency, chronic"[MeSH Terms] OR ("renal"[All Fields] AND "insufficiency"[All Fields] AND "chronic"[All Fields]) OR "chronic renal insufficiency"[All Fields] OR ("chronic"[All Fields] AND "kidney"[All Fields] AND "disease"[All Fields]) OR "chronic kidney disease"[All Fields] **peritoneal dialysis:** "peritoneal dialysis"[MeSH Terms] OR ("peritoneal"[All Fields] AND "dialysis"[All Fields]) OR "peritoneal dialysis"[All Fields] **Hemodialysis:** "haemodialysis"[All Fields] OR "renal dialysis"[MeSH Terms] OR ("renal"[All Fields] AND "dialysis"[All Fields]) OR "renal dialysis"[All Fields] OR "hemodialysis"[All Fields]	175	22:13:11

SR作為filters
篩選level 1文獻

P AND I AND C

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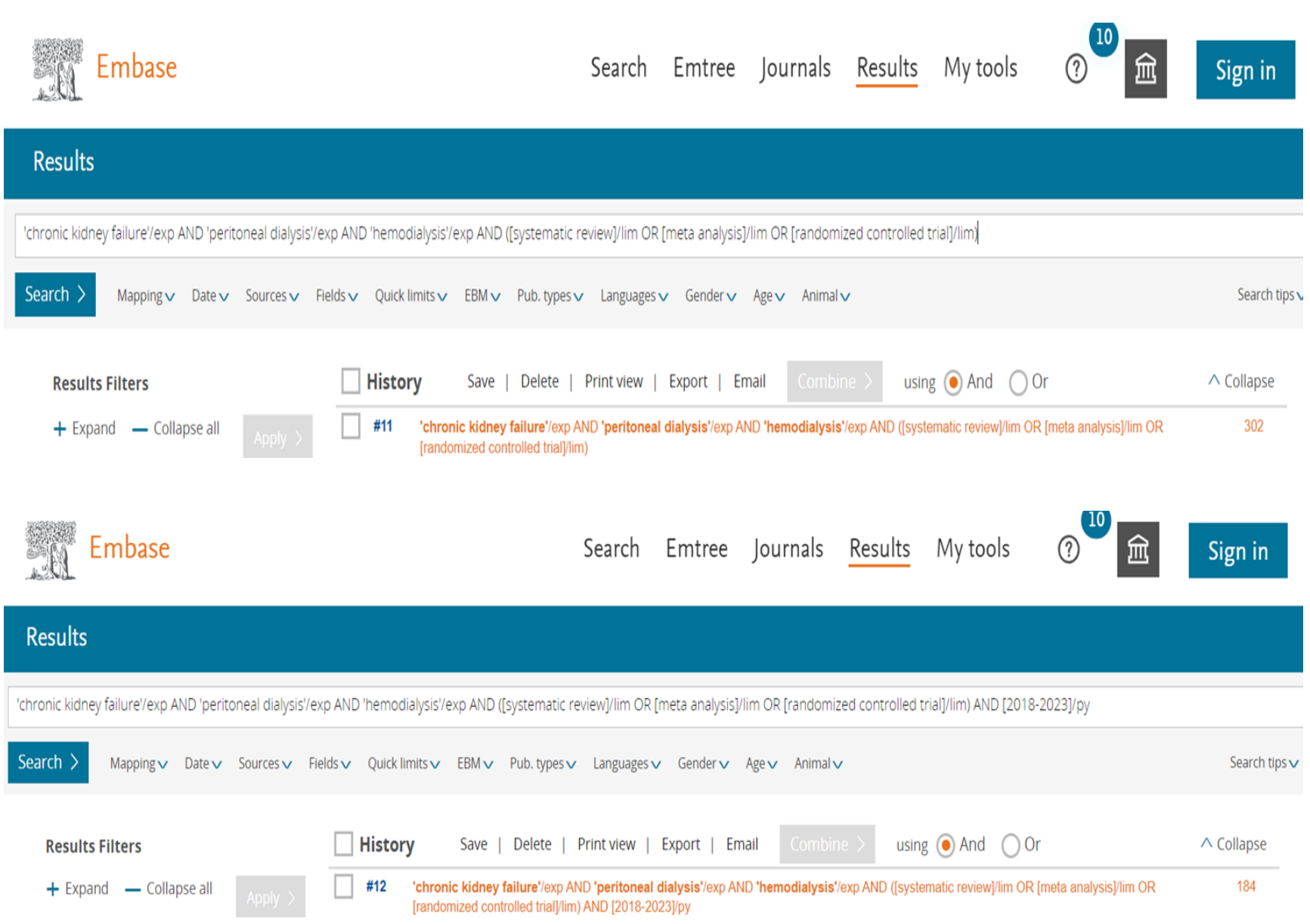
篩選level 1文獻

P AND I

確認advanced
search正確

使用MeSH terms

搜尋 Embase



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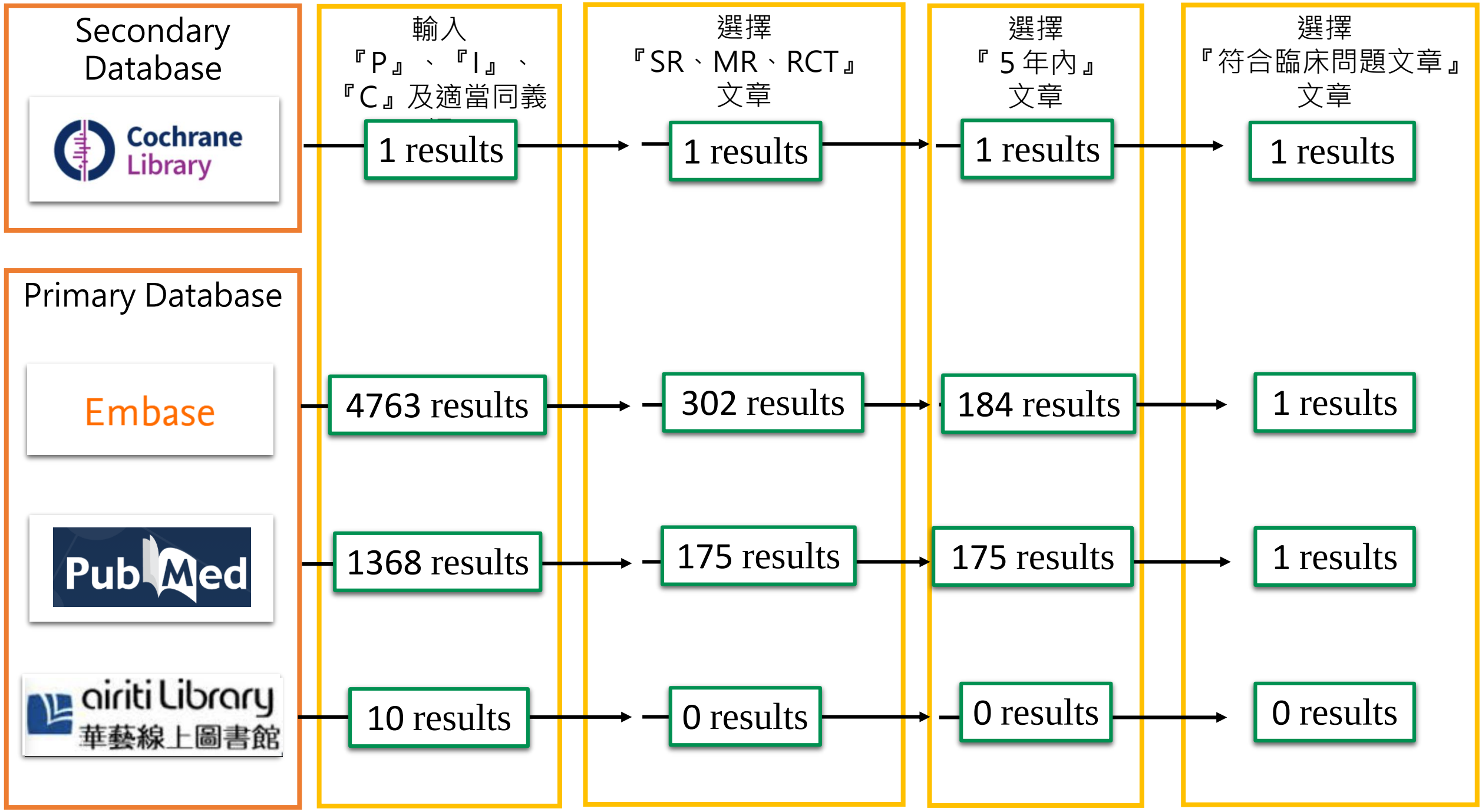
適當使用布林運算『AND』、『OR』

不限語言類型地區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選擇『SR、MR、RCT』文章
選擇『5年內』文章
選擇『符合臨床問題文章』文章
1 results
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1 results
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1 results
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175 results
175 results
1 results
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0 results
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選擇文獻

文獻標題[年份]	研究設計	樣本數	搜尋時間	情境
Urgent-start peritoneal dialysis versus haemodialysis for people with chronic kidney disease (Review)	SR of RCTs	7 Trials	~ 25 May 2020	P ● I ● C ● O ●

選擇最佳文獻

Cochrane Library

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Cochrane Database of Systematic Reviews | Review - Intervention

Urgent-start peritoneal dialysis versus haemodialysis for people with chronic kidney disease

Htay Htay, David W Johnson, Jonathan C Craig, Armando Teixeira-Pinto, Carmel M Hawley, Yeoungjee Cho
Authors' declarations of interest

Version published: 27 January 2021 Version history
https://doi.org/10.1002/14651858.CD012899.pub2

✔ 最佳研究設計SR of RCT
✔ 較新的發表年份
✔ 最符合臨床情境PICO

確認是否遺漏更新更好的RCT

PubMed

Filters applied: Full text, Randomized Controlled Trial, in the last 5 years. Clear all

1 Cite Share

A randomized controlled comparative study of different fluid exchange modes in **urgent**-start **peritoneal dialysis** in patients with end-stage **renal disease**: automated **peritoneal dialysis** combined with manual fluid exchange vs. manual fluid exchange alone.

Xia X, He X, Pu L, Liu X, Zhou X, Wu XF, Zang Z, Li Z.

Ren Fail. 2023 Dec;45(1):2202756. doi: 10.1080/0886022X.2023.2202756.

PMID: 37313750 **Free PMC article.** Clinical Trial.

During **urgent**-start **peritoneal dialysis** (USPD) in end-stage **renal disease** (ESRD) patients, both adequate **dialysis** and skill training for fluid exchange are essential. However, automated **peritoneal dialysis** (APD) alone or man ...

2 Cite Share

Low-Volume Tidal **Peritoneal Dialysis** Is a Preferable Mode in Patients Initiating **Urgent**-Start Automated **Peritoneal Dialysis**: A Randomized, Open-Label, Prospective Control Study.

Xie J, Wang H, Li S, Zuo Y, Wang Y, Zhang Y, Liang T, Li J, Wang L, Feng Z, Ye Z, Liang X, Shi W, Wang W.

Ther Apher Dial. 2019 Oct;23(5):409-417. doi: 10.1111/1744-9987.12791. Epub 2019 Mar 6.

PMID: 30624012 Clinical Trial.

The aim of this study is to evaluate the safety of low-volume tidal **peritoneal dialysis** (TPD) and intermittent **peritoneal dialysis** (IPD) in ESRD patients initiating automated **peritoneal dialysis** (APD) after an acute catheter insertion. .. ...

確認是否遺漏更新更好的RCT

Embase

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0 search results.

- Check your syntax and/or spelling
- Expand your search with additional synonyms
- Try using wildcards to search on spelling variants
- Reduce the number of limits applied to your search
- Increase the range of publication years searched

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5A-3 Appraise 評讀文獻

評讀工具

CASP
Critical Appraisal
Skills Programme

CASP Checklist: 10 questions to help you make sense of a **Systematic Review**

How to use this appraisal tool: Three broad issues need to be considered when appraising a systematic review study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

✔ 針對效度直觀分析
✔ 針對結果直觀分析
✔ 共10個問題探討各面向

Validity：1.此系統性回顧是否問了一個清楚、明確的臨床問題？

Objectives
This review aimed to examine the benefits and harms of urgent-start PD compared to HD initiated using a CVC in adults and children with CKD requiring long-term kidney replacement therapy.

評讀結果

P	Chronic kidney disease
I	Peritoneal dialysis
C	Hemodialysis
O	Mortality

✔ Yes □ No □ Can’t

Validity：2.作者是否尋找適當研究型態的文獻?

Types of studies

All randomised controlled trials (RCTs), quasi-RCTs (RCTs in which allocation to treatment was obtained by alternation, use of alternate medical records, date of birth or other predictable methods), and non-RCTs comparing urgent-start PD to HD treatments via CVC.

Types of participants

Inclusion criteria

Participants included in this review were both adults and children with CKD, who require dialysis treatment. Participants had a PD catheter inserted to undergo PD or a CVC for HD.

Exclusion criteria

The review did not include data obtained from patients with acute kidney injury.

✔ Yes □ No □ Can't

評讀結果

- 收錄符合問題的RCT
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入RCT及non RCT

Validity：3.你認為所有重要且相關的研究都被納入?

Included studies

Seven studies (991 participants) were included in the review. Studies were conducted in the USA (Bhalla 2017; Ghaffari 2015; Wang 2017), China (Jin 2016), Brazil (Brabo 2018), France (Lobbedez 2008), and Germany (Koch 2012). There were four single-centre retrospective cohort studies and three single-centre prospective cohort studies (Table 1). Six out of seven studies compared the clinical outcomes between urgent-start PD and HD using a CVC and one study (Brabo 2018) compared the cost of dialysis between these two modalities.

Two studies (301 participants) examined peritonitis (Jin 2016; Koch 2012), two studies (301 participants) examined bacteraemia (Jin 2016; Koch 2012, one study (419 participants) examined the exit-site infection (Bhalla 2017), one study (178 participants) examined the exit-site bleeding (Jin 2016), two studies (597 participants) examined catheter malfunction (Bhalla 2017; Jin 2016), two studies (225 participants) examined catheter readjustment (Jin 2016; Wang 2017), one study (123 participants) examined technique survival (Koch 2012), five studies (820 participants) examined death (any cause) (Bhalla 2017; Brabo 2018; Jin 2016; Koch 2012; Lobbedez 2008), one study (123 participants) examined hospitalisation (Koch 2012), and one study (40 participants) examined the cost of dialysis (Brabo 2018).

Excluded studies

In total, 37 studies were excluded. The reasons for exclusion were: review articles; surveys; lack of control group for urgent-start PD; wrong comparison; or wrong intervention (Figure 1).

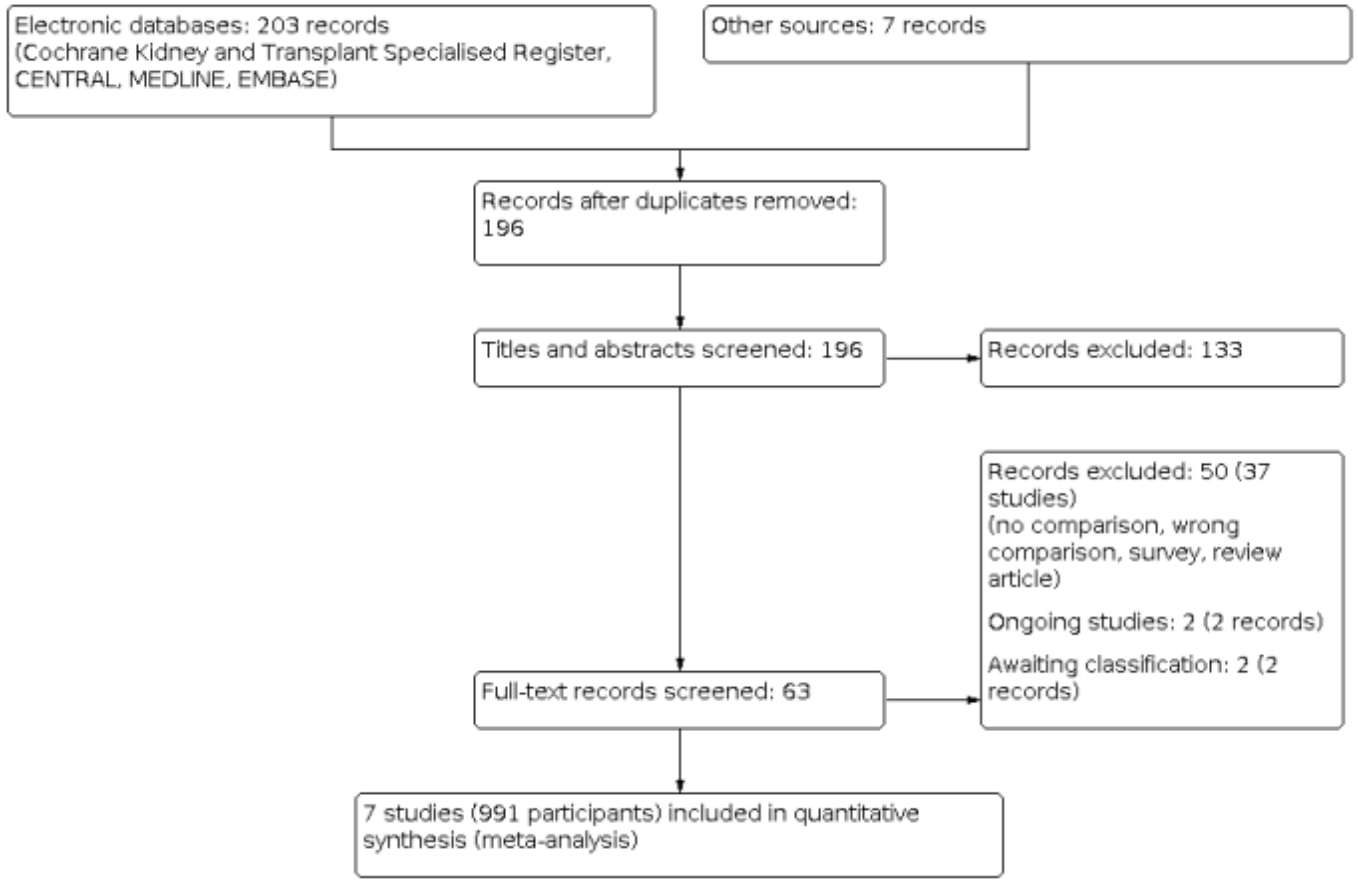
評讀結果

- 搜尋各種資料庫
- Prisma protocol 清楚說明納入排除理由
- 搜尋不限年代、語言、國家、種族
- 從參考資料再搜尋
- 與專家聯繫
- 包含已/未發表文獻
- 搜尋非英文文獻

✔ Yes □ No □ Can't

Validity：3.你認為所有重要且相關的研究都被納入?

Figure 1. Study flow diagram.



✔ Yes □ No □ Can't

評讀結果

- 搜尋各種資料庫
- Prisma protocol 清楚說明納入排除理由
- 搜尋不限年代、語言、國家、種族
- 從參考資料再搜尋
- 與專家聯繫
- 包含已/未發表文獻
- 搜尋非英文文獻

Validity：4.作者是否評估所納入研究文獻的品質？

Search methods

We searched the Cochrane Kidney and Transplant Register of Studies up to 25 May 2020 for randomised controlled trials through contact with the Information Specialist using search terms relevant to this review. Studies in the Register are identified through searches of CENTRAL, MEDLINE, and EMBASE, conference proceedings, the International Clinical Trials Register (ICTRP) Search Portal and ClinicalTrials.gov.

Database	Search terms
CENTRAL	1. MeSH descriptor: [Peritoneal Dialysis] explode all trees 2. peritoneal dialysis*:ti,ab,kw (Word variations have been searched) 3. PD or CAPD or CCPD:ti,ab,kw (Word variations have been searched) 4. {or #1-#3} 5. urgent start*:ti,ab,kw (Word variations have been searched) 6. urgent initiation:ti,ab,kw (Word variations have been searched) 7. urgent*:ti,ab,kw (Word variations have been searched) 8. "unplanned":ti,ab,kw (Word variations have been searched) 9. {or #5-#8} 10."renal replacement therapy":ti,ab,kw 11.dialysis:ti,ab,kw 12.h*emodialysis:ti,ab,kw 13.("endstage kidney" or "endstage renal" or "end stage kidney" or "end stage renal"):ti,ab,kw 14.(ESKD or ESKF or ESRD or ESRF):ti,ab,kw 15.{or #10-#14}
MEDLINE	1. Renal Replacement Therapy/ 2. exp Peritoneal Dialysis/ 3. peritoneal dialysis.tw. 4. (CAPD or CCPD or APD).tw. 5. or/1-4 6. Renal Replacement Therapy/ 7. Renal Dialysis/ 8. Hemodiafiltration/ 9. Hemodialysis, home/

(Continued)

	10.exp Hemofiltration/ 11.dialysis.tw. 12.(hemodialysis or haemodialysis).tw. 13.(hemofiltration or haemofiltration).tw. 14.(hemodiafiltration or haemodiafiltration).tw. 15.or/6-14 16.urgent.tw. 17.urgent start$.tw. 18.urgent initiation.tw. 19.unplanned.tw. 20.(early adj2 peritoneal dialysis).tw. 21.or/16-20 22.and/5,15,21
EMBASE	1. Peritoneal Dialysis/ 2. Continuous Ambulatory Peritoneal Dialysis/ 3. peritoneal dialysis.tw. 4. (PD or CAPD or CCPD or APD).tw. 5. peritoneal dialysis fluid/ 6. renal replacement therapy-dependent renal disease/ 7. peritoneal dialysis catheter/ 8. or/1-7 9. exp renal replacement therapy/ 10.extended daily dialysis/ 11.hemodialysis/ 12.home dialysis/ 13.hemofiltration/ 14.hemodiafiltration/ 15.dialysis.tw. 16.(hemodialysis or haemodialysis).tw. 17.(hemofiltration or haemofiltration).tw. 18.(hemodiafiltration or haemodiafiltration).tw. 19.renal replacement therapy-dependent renal disease/ 20.or/9-19 21.urgent.tw. 22.urgent start$.tw. 23.urgent initiation.tw. 24.unplanned.tw. 25.or/21-24 26.and/8,20,25

評讀結果

- 2個reviewers獨立評讀所收錄的所有研究
- 評讀依據研究設計、blinding 、bias 、限制、一致性判斷貢獻度、outcomes

✔ Yes □ No □ Can't

Validity：4.作者是否評估所納入研究文獻的品質？

Table 2. Assessment of quality of studies

Study	Selection				Compara-bility	Outcome			Evidence of quality
	Representa-tiveness of exposed co-hort	Selection of non-exposed cohort	Ascertain-ment of expo-sure	Outcomes not present at start		Assess-ment of outcome	Length of follow-up	Adequa-cy of fol-low-up	
Bhalla 2017	*	*	*	*	*	*	*	--	7
Brabo 2018	--	--	*	*	--	--	*	*	4
Ghaffari 2015	*	*	--	*	-	--	*	*	5
Jin 2016	*	*	*	*	*	*	*	--	7
Koch 2012	*	*	*	*	*	*	*	--	7
Lobbedez 2008	*	*	*	*	*	*	*	--	7
Wang 2017	--	--	*	*	--	--	*	--	3

評讀結果

- 2個reviewers獨立評讀所收錄的所有研究
- 評讀依據研究設計、blinding 、bias 、限制、一致性判斷貢獻度、outcomes

✔ Yes □ No □ Can't

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

Subgroup analysis and investigation of heterogeneity

Subgroup analysis was used to explore possible sources of heterogeneity (e.g. participants, interventions and study quality including method of PD catheter insertion). Heterogeneity among participants could have been related to age and renal pathology (e.g. children versus adults). Heterogeneity in treatments could have been related to prior agent(s) used and the agent, dose, and duration of therapy (e.g. initial fill volume). Therefore, subgroup analysis was conducted to evaluate the source of heterogeneity according to:

- Participants
  - Adult versus paediatric patients
  - Incident versus prevalent patients
- Setting
  - Single-centre versus multi-centre
- Type of treatment utilised
  - According to initial fill volume
  - Days to PD commencement (e.g. within 24 hours versus 7 days)
- Methodological quality

Adverse effects were tabulated and assessed with descriptive techniques, as they were likely to be different for the various agents used. Where possible, the risk difference with 95% CI was calculated for each adverse effect, either compared to no treatment or to another agent.

Sensitivity analysis

We performed sensitivity analyses in order to explore the influence of the following factors on effect size.

- Repeating the analysis excluding unpublished studies
- Repeating the analysis taking account of risk of bias, as specified
- Repeating the analysis excluding any very long or large studies to establish how much they dominate the results
- Repeating the analysis excluding studies using the following filters: diagnostic criteria, language of publication, source of funding (industry versus other), and country.

評讀結果

- 次族群分析
- 敏感性測試

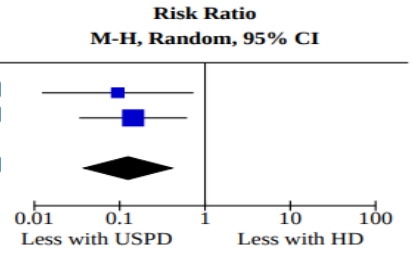
✔Yes □ No □ Can't

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

Analysis 1.1. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 1: Bacteraemia

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	1	96	9	82	33.6%	0.09 [0.01 , 0.73]
Koch 2012	2	66	12	57	66.4%	0.14 [0.03 , 0.62]
Total (95% CI)		**162**		**139**	**100.0%**	**0.13 [0.04 , 0.41]**
Total events:	3		21			

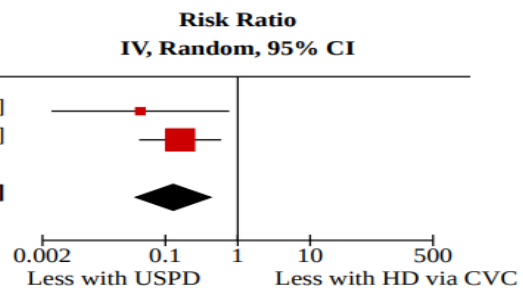
Heterogeneity: Tau² = 0.00; Chi² = 0.11, df = 1 (P = 0.74); I² = 0%
Test for overall effect: Z = 3.44 (P = 0.0006)
Test for subgroup differences: Not applicable



Analysis 1.2. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 2: Bacteraemia (adjusted data)

Study or Subgroup	log[RR]	SE	Weight	Risk Ratio IV, Random, 95% CI
Jin 2016	-3.1003	1.4432	17.5%	0.05 [0.00 , 0.76]
Koch 2012	-1.8326	0.6658	82.5%	0.16 [0.04 , 0.59]
Total (95% CI)			**100.0%**	**0.13 [0.04 , 0.42]**

Heterogeneity: Tau² = 0.00; Chi² = 0.64, df = 1 (P = 0.43); I² = 0%
Test for overall effect: Z = 3.40 (P = 0.0007)
Test for subgroup differences: Not applicable



✔ Yes □ No □ Can't tell

評讀結果

- 異質性（heterogeneity）：P=0.74、I^2:0%
- 異質性（heterogeneity）：P=0.43、I^2:0%
- 採用-random model

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

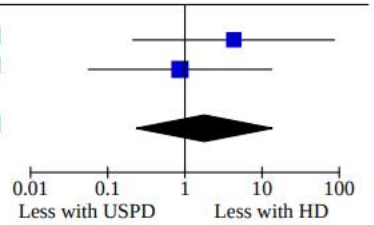
Analysis 1.3. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 3: Peritonitis

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	2	96	0	82	45.3%	4.28 [0.21 , 87.86]
Koch 2012	1	66	1	57	54.7%	0.86 [0.06 , 13.50]
Total (95% CI)		**162**		**139**	**100.0%**	**1.78 [0.23 , 13.62]**
Total events:	3		1			

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.60$, df = 1 (P = 0.44); $I^2 = 0\%$

Test for overall effect: Z = 0.56 (P = 0.58)

Test for subgroup differences: Not applicable



✔Yes □ No □ Can't

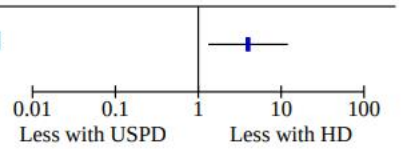
評讀結果

- 異質性（heterogeneity）：P=0.44、I^2:0%
- 採用-random model

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

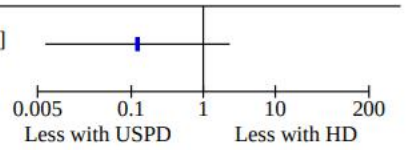
Analysis 1.4. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 4: Exit-site or tunnel infection

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Risk Ratio M-H, Random, 95% CI
Bhalla 2017	6	84	6	335	3.99 [1.32 , 12.05]



Analysis 1.5. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 5: Exit-site bleeding

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	3	82	0.12 [0.01 , 2.33]



□ Yes □ No □ Can’t tell

評讀結果

只有單篇研究有提出結果，故無異質性分析

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

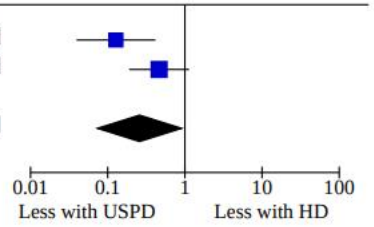
Analysis 1.6. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 6: Catheter malfunction

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	3	96	20	82	45.4%	0.13 [0.04 , 0.42]
Bhalla 2017	5	84	43	335	54.6%	0.46 [0.19 , 1.13]
Total (95% CI)		**180**		**417**	**100.0%**	**0.26 [0.07 , 0.91]**
Total events:	8		63			

Heterogeneity: Tau² = 0.55; Chi² = 2.92, df = 1 (P = 0.09); I² = 66%

Test for overall effect: Z = 2.11 (P = 0.04)

Test for subgroup differences: Not applicable



□ Yes ✔ No □ Can't

評讀結果

- 異質性（heterogeneity）：P=0.09、I^2:66%
- 採用-random model

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

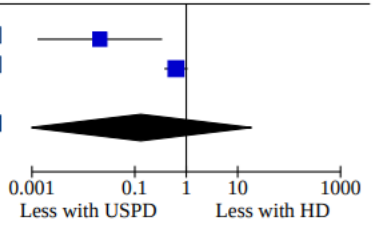
Analysis 1.7. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 7: Catheter readjustment

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	20	82	46.2%	0.02 [0.00 , 0.34]
Wang 2017	9	19	21	28	53.8%	0.63 [0.38 , 1.06]
Total (95% CI)		**115**		**110**	**100.0%**	**0.13 [0.00 , 18.61]**
Total events:	9		41			

Heterogeneity: Tau² = 11.83; Chi² = 12.28, df = 1 (P = 0.0005); I² = 92%

Test for overall effect: Z = 0.80 (P = 0.42)

Test for subgroup differences: Not applicable



評讀結果

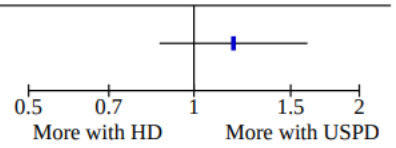
- 異質性（heterogeneity）：P=0.0005、I^2:92%
- 採用-random model

□ Yes ☑ No □ Can't

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

Analysis 1.8. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 8: Technique survival

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Risk Ratio M-H, Random, 95% CI
Koch 2012	41	66	30	57	1.18 [0.87 , 1.61]



評讀結果

只有單篇研究有提出結果，故無異質性分析

研究

□ Yes □ No☑ Can't

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

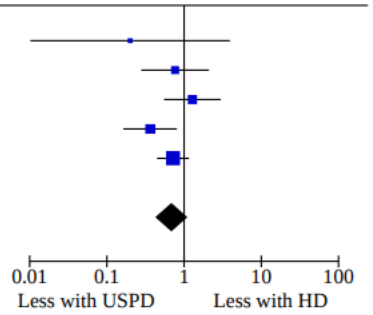
Analysis 1.9. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 9: Death (any cause)

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Brabo 2018	0	20	2	20	2.2%	0.20 [0.01 , 3.92]
Lobbedez 2008	6	34	6	26	15.4%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	20.3%	1.28 [0.55 , 2.98]
Bhalla 2017	6	84	66	335	21.9%	0.36 [0.16 , 0.81]
Koch 2012	20	66	24	57	40.3%	0.72 [0.45 , 1.16]
Total (95% CI)		**300**		**520**	**100.0%**	**0.68 [0.44 , 1.07]**
Total events:	44		106			

Heterogeneity: Tau² = 0.07; Chi² = 5.47, df = 4 (P = 0.24); I² = 27%

Test for overall effect: Z = 1.67 (P = 0.09)

Test for subgroup differences: Not applicable



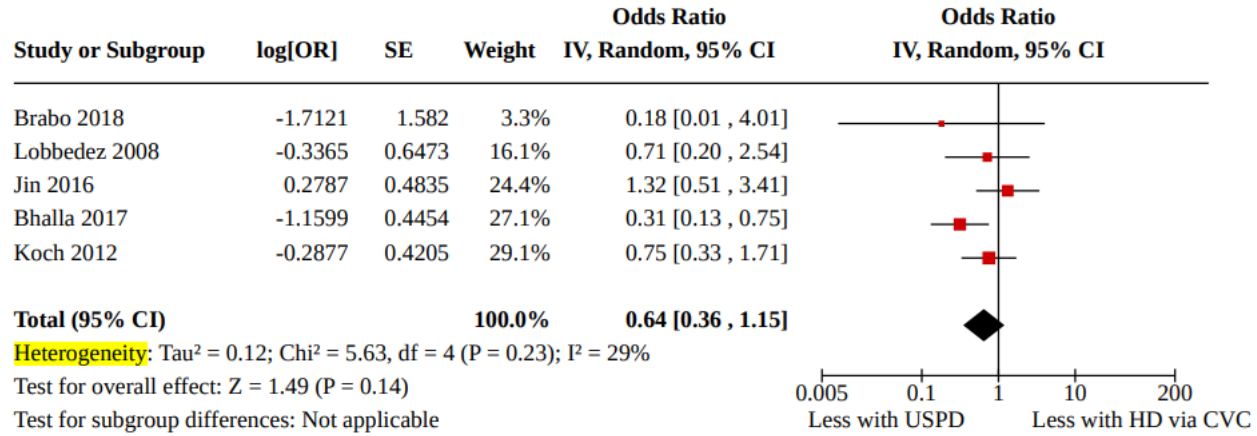
評讀結果

- 異質性（heterogeneity）：P=0.24、I^2:27%
- 採用-random model

✔ Yes □ No □ Can't

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

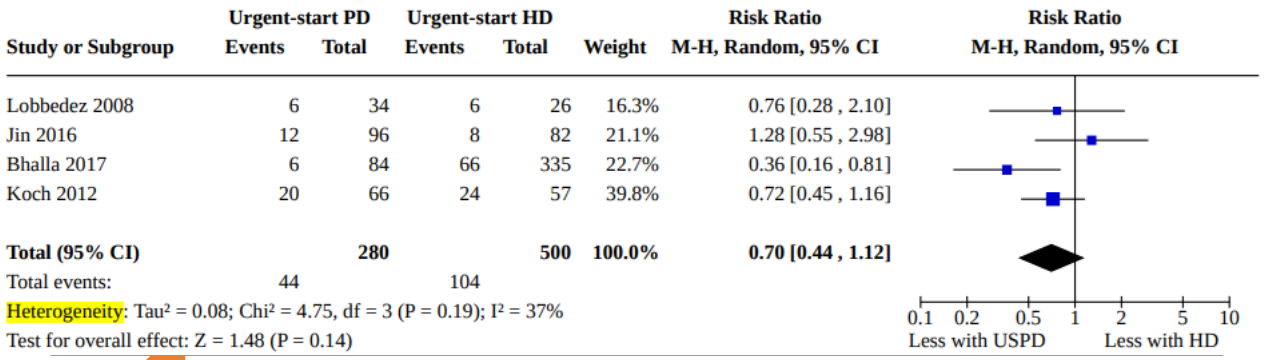
Analysis 1.10. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 10: Death (any cause): adjusted data



Study or Subgroup	log[OR]	SE	Weight	Odds Ratio IV, Random, 95% CI
Brabo 2018	-1.7121	1.582	3.3%	0.18 [0.01 , 4.01]
Lobbedez 2008	-0.3365	0.6473	16.1%	0.71 [0.20 , 2.54]
Jin 2016	0.2787	0.4835	24.4%	1.32 [0.51 , 3.41]
Bhalla 2017	-1.1599	0.4454	27.1%	0.31 [0.13 , 0.75]
Koch 2012	-0.2877	0.4205	29.1%	0.75 [0.33 , 1.71]
Total (95% CI)			**100.0%**	**0.64 [0.36 , 1.15]**

Heterogeneity: Tau² = 0.12; Chi² = 5.63, df = 4 (P = 0.23); I² = 29%
Test for overall effect: Z = 1.49 (P = 0.14)
Test for subgroup differences: Not applicable

Analysis 1.11. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 11: Death (any cause): studies with low risk of bias



Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Lobbedez 2008	6	34	6	26	16.3%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	21.1%	1.28 [0.55 , 2.98]
Bhalla 2017	6	84	66	335	22.7%	0.36 [0.16 , 0.81]
Koch 2012	20	66	24	57	39.8%	0.72 [0.45 , 1.16]
Total (95% CI)		**280**		**500**	**100.0%**	**0.70 [0.44 , 1.12]**
Total events:	44		104			

Heterogeneity: Tau² = 0.08; Chi² = 4.75, df = 3 (P = 0.19); I² = 37%
Test for overall effect: Z = 1.48 (P = 0.14)

✔Yes □ No □ Can't

評讀結果

- 異質性（heterogeneity）：P=0.23、I^2:29%
- 異質性（heterogeneity）：P=0.19、I^2:37%
- 採用-random model

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

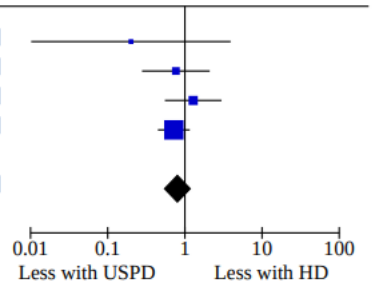
Analysis 1.12. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 12: Death (any cause): sensitivity analysis (excluding large studies)

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Brabo 2018	0	20	2	20	1.6%	0.20 [0.01 , 3.92]
Lobbedez 2008	6	34	6	26	14.2%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	20.3%	1.28 [0.55 , 2.98]
Koch 2012	20	66	24	57	63.9%	0.72 [0.45 , 1.16]
Total (95% CI)		**216**		**185**	**100.0%**	**0.80 [0.55 , 1.17]**
Total events:	38		40			

Heterogeneity: Tau² = 0.00; Chi² = 2.23, df = 3 (P = 0.53); I² = 0%

Test for overall effect: Z = 1.16 (P = 0.25)

Test for subgroup differences: Not applicable



評讀結果

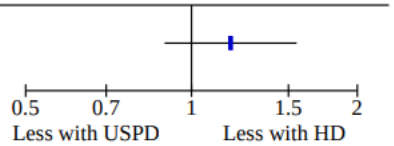
- 異質性（heterogeneity）：P=0.53、I^2:0%
- 採用-random model

✔ Yes □ No □ Can't

Validity：5.作者將研究結果進行合併，這樣的合併是否合理?

Analysis 1.13. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 13: Hospitalisation

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Koch 2012	45	66	33	57	1.18 [0.89 , 1.55]



評讀結果

只有單篇研究有提出結果，故無異質性分析

研究

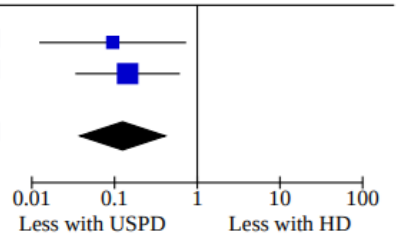
□ Yes □ No □ Can’t

Importance：6.這篇系統性文獻回顧的整體結果為何？

Analysis 1.1. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 1: Bacteraemia

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	1	96	9	82	33.6%	0.09 [0.01 , 0.73]
Koch 2012	2	66	12	57	66.4%	0.14 [0.03 , 0.62]
Total (95% CI)		**162**		**139**	**100.0%**	**0.13 [0.04 , 0.41]**
Total events:	3		21			

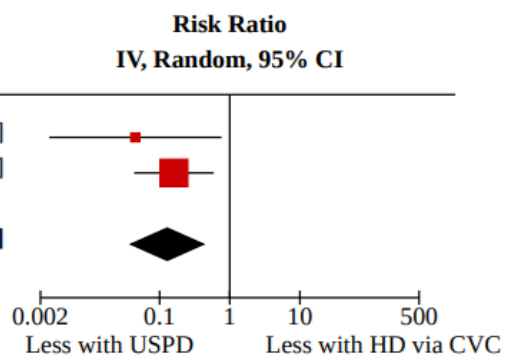
Heterogeneity: Tau² = 0.00; Chi² = 0.11, df = 1 (P = 0.74); I² = 0%
Test for overall effect: Z = 3.44 (P = 0.0006)
Test for subgroup differences: Not applicable



Analysis 1.2. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 2: Bacteraemia (adjusted data)

Study or Subgroup	log[RR]	SE	Weight	Risk Ratio IV, Random, 95% CI
Jin 2016	-3.1003	1.4432	17.5%	0.05 [0.00 , 0.76]
Koch 2012	-1.8326	0.6658	82.5%	0.16 [0.04 , 0.59]
Total (95% CI)			**100.0%**	**0.13 [0.04 , 0.42]**

Heterogeneity: Tau² = 0.00; Chi² = 0.64, df = 1 (P = 0.43); I² = 0%
Test for overall effect: Z = 3.40 (P = 0.0007)
Test for subgroup differences: Not applicable



✔ Yes □ No □ Can't tell

評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

Importance：6.這篇系統性文獻回顧的整體結果為何？

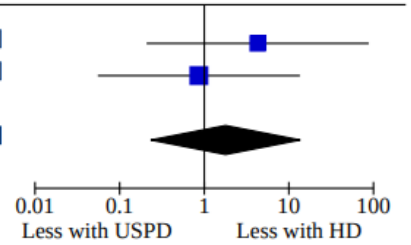
Analysis 1.3. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 3: Peritonitis

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	2	96	0	82	45.3%	4.28 [0.21 , 87.86]
Koch 2012	1	66	1	57	54.7%	0.86 [0.06 , 13.50]
Total (95% CI)		**162**		**139**	**100.0%**	**1.78 [0.23 , 13.62]**
Total events:	3		1			

Heterogeneity: Tau² = 0.00; Chi² = 0.60, df = 1 (P = 0.44); I² = 0%

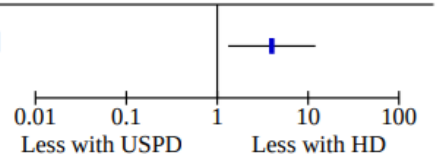
Test for overall effect: Z = 0.56 (P = 0.58)

Test for subgroup differences: Not applicable



Analysis 1.4. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 4: Exit-site or tunnel infection

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Bhalla 2017	6	84	6	335	3.99 [1.32 , 12.05]



✔ Yes □ No □ Can't

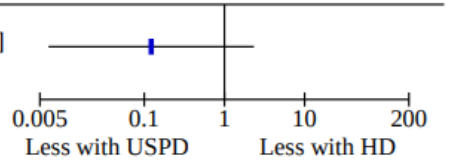
評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

Importance：6.這篇系統性文獻回顧的整體結果為何？

Analysis 1.5. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 5: Exit-site bleeding

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	3	82	0.12 [0.01 , 2.33]



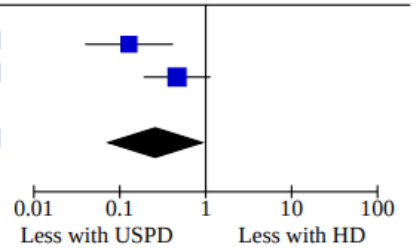
Analysis 1.6. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 6: Catheter malfunction

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	3	96	20	82	45.4%	0.13 [0.04 , 0.42]
Bhalla 2017	5	84	43	335	54.6%	0.46 [0.19 , 1.13]
Total (95% CI)		**180**		**417**	**100.0%**	**0.26 [0.07 , 0.91]**
Total events:	8		63			

Heterogeneity: Tau² = 0.55; Chi² = 2.92, df = 1 (P = 0.09); I² = 66%

Test for overall effect: Z = 2.11 (P = 0.04)

Test for subgroup differences: Not applicable



✔ Yes □ No □ Can't

評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

Importance：6.這篇系統性文獻回顧的整體結果為何？

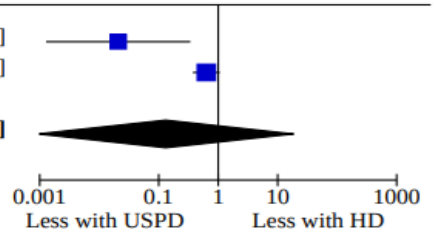
Analysis 1.7. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 7: Catheter readjustment

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	20	82	46.2%	0.02 [0.00 , 0.34]
Wang 2017	9	19	21	28	53.8%	0.63 [0.38 , 1.06]
Total (95% CI)		**115**		**110**	**100.0%**	**0.13 [0.00 , 18.61]**
Total events:	9		41			

Heterogeneity: Tau² = 11.83; Chi² = 12.28, df = 1 (P = 0.0005); I² = 92%

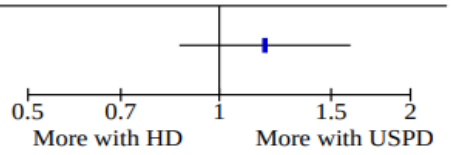
Test for overall effect: Z = 0.80 (P = 0.42)

Test for subgroup differences: Not applicable



Analysis 1.8. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 8: Technique survival

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Koch 2012	41	66	30	57	1.18 [0.87 , 1.61]



評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

✔ Yes □ No □ Can't

Importance：6.這篇系統性文獻回顧的整體結果為何？

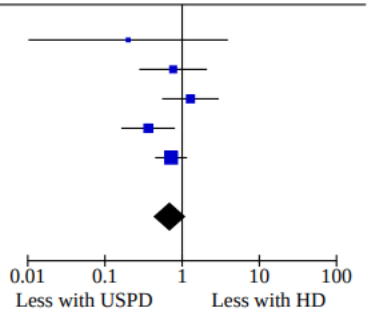
Analysis 1.9. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 9: Death (any cause)

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Brabo 2018	0	20	2	20	2.2%	0.20 [0.01 , 3.92]
Lobbedez 2008	6	34	6	26	15.4%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	20.3%	1.28 [0.55 , 2.98]
Bhalla 2017	6	84	66	335	21.9%	0.36 [0.16 , 0.81]
Koch 2012	20	66	24	57	40.3%	0.72 [0.45 , 1.16]
Total (95% CI)		**300**		**520**	**100.0%**	**0.68 [0.44 , 1.07]**
Total events:	44		106			

Heterogeneity: Tau² = 0.07; Chi² = 5.47, df = 4 (P = 0.24); I² = 27%

Test for overall effect: Z = 1.67 (P = 0.09)

Test for subgroup differences: Not applicable



評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

✔ Yes □ No □ Can't

Importance：6.這篇系統性文獻回顧的整體結果為何？

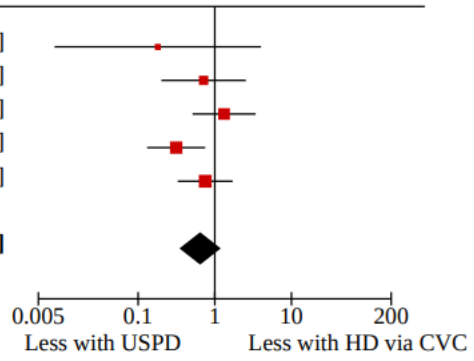
Analysis 1.10. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 10: Death (any cause): adjusted data

Study or Subgroup	log[OR]	SE	Weight	Odds Ratio IV, Random, 95% CI
Brabo 2018	-1.7121	1.582	3.3%	0.18 [0.01 , 4.01]
Lobbedez 2008	-0.3365	0.6473	16.1%	0.71 [0.20 , 2.54]
Jin 2016	0.2787	0.4835	24.4%	1.32 [0.51 , 3.41]
Bhalla 2017	-1.1599	0.4454	27.1%	0.31 [0.13 , 0.75]
Koch 2012	-0.2877	0.4205	29.1%	0.75 [0.33 , 1.71]
Total (95% CI)			**100.0%**	**0.64 [0.36 , 1.15]**

Heterogeneity: Tau² = 0.12; Chi² = 5.63, df = 4 (P = 0.23); I² = 29%

Test for overall effect: Z = 1.49 (P = 0.14)

Test for subgroup differences: Not applicable

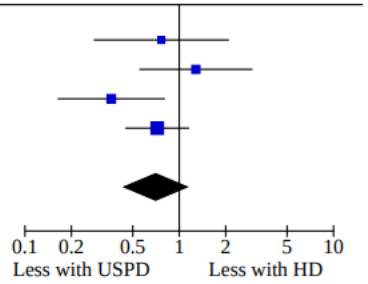


Analysis 1.11. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 11: Death (any cause): studies with low risk of bias

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Lobbedez 2008	6	34	6	26	16.3%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	21.1%	1.28 [0.55 , 2.98]
Bhalla 2017	6	84	66	335	22.7%	0.36 [0.16 , 0.81]
Koch 2012	20	66	24	57	39.8%	0.72 [0.45 , 1.16]
Total (95% CI)		**280**		**500**	**100.0%**	**0.70 [0.44 , 1.12]**
Total events:	44		104			

Heterogeneity: Tau² = 0.08; Chi² = 4.75, df = 3 (P = 0.19); I² = 37%

Test for overall effect: Z = 1.48 (P = 0.14)



✔ Yes □ No □ Can't tell

評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

Importance：6.這篇系統性文獻回顧的整體結果為何？

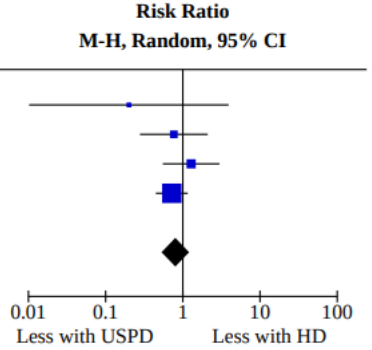
Analysis 1.12. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 12: Death (any cause): sensitivity analysis (excluding large studies)

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Weight	Risk Ratio M-H, Random, 95% CI
Brabo 2018	0	20	2	20	1.6%	0.20 [0.01 , 3.92]
Lobbedez 2008	6	34	6	26	14.2%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	20.3%	1.28 [0.55 , 2.98]
Koch 2012	20	66	24	57	63.9%	0.72 [0.45 , 1.16]
Total (95% CI)		**216**		**185**	**100.0%**	**0.80 [0.55 , 1.17]**
Total events:	38		40			

Heterogeneity: Tau² = 0.00; Chi² = 2.23, df = 3 (P = 0.53); I² = 0%

Test for overall effect: Z = 1.16 (P = 0.25)

Test for subgroup differences: Not applicable



✔Yes □ No □ Can't

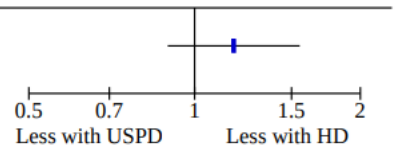
評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

Importance：6.這篇系統性文獻回顧的整體結果為何？

Analysis 1.13. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 13: Hospitalisation

Study or Subgroup	Urgent-start PD Events	Urgent-start PD Total	Urgent-start HD Events	Urgent-start HD Total	Risk Ratio M-H, Random, 95% CI
Koch 2012	45	66	33	57	1.18 [0.89 , 1.55]

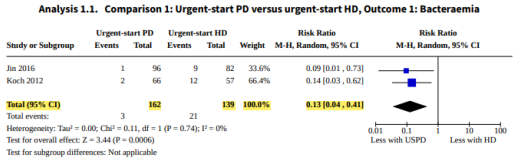


✔ Yes □ No □ Can’t

評讀結果

- 收錄符合問題文獻
- 清楚定義了納入條件
- 清楚定義排除條件
- 納入研究皆嚴格評讀
- 效果
- 副作用
- 次族群分析
- 敏感性測試

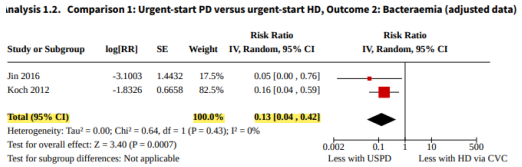
Importance：7.結果精準嗎？


Analysis 1.1. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 1: Bacteraemia

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	1	96	9	82	33.6%	0.09 [0.01 , 0.73]
Koch 2012	2	66	12	57	66.4%	0.14 [0.03 , 0.62]
Total (95% CI)		**162**		**139**	**100.0%**	**0.13 [0.04 , 0.41]**
Total events:	3		21			

Heterogeneity: Tau² = 0.00; Chi² = 0.11, df = 1 (P = 0.74); I² = 0%
Test for overall effect: Z = 3.44 (P = 0.0006)
Test for subgroup differences: Not applicable

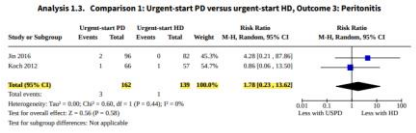
Risk Ratio M-H, Random, 95% CI
0.01 0.1 1 10 100
Less with USPD Less with HD


Analysis 1.2. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 2: Bacteraemia (adjusted data)

Study or Subgroup	log[RR]	SE	Weight	Risk Ratio IV, Random, 95% CI
Jin 2016	-3.1003	1.4432	17.5%	0.05 [0.00 , 0.76]
Koch 2012	-1.8326	0.6658	82.5%	0.16 [0.04 , 0.59]
Total (95% CI)			**100.0%**	**0.13 [0.04 , 0.42]**

Heterogeneity: Tau² = 0.00; Chi² = 0.64, df = 1 (P = 0.43); I² = 0%
Test for overall effect: Z = 3.40 (P = 0.0007)
Test for subgroup differences: Not applicable

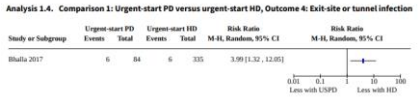
Risk Ratio IV, Random, 95% CI
0.002 0.1 1 10 500
Less with USPD Less with HD via CVC


Analysis 1.3. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 3: Peritonitis

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	2	96	0	82	45.3%	4.28 [0.21 , 87.86]
Koch 2012	1	66	1	57	54.7%	0.86 [0.06 , 13.50]
Total (95% CI)		**162**		**139**	**100.0%**	**1.78 [0.23 , 13.62]**
Total events:	3		1			

Heterogeneity: Tau² = 0.00; Chi² = 0.60, df = 1 (P = 0.44); I² = 0%
Test for overall effect: Z = 0.56 (P = 0.58)
Test for subgroup differences: Not applicable

Risk Ratio M-H, Random, 95% CI
0.01 0.1 1 10 100
Less with USPD Less with HD


Analysis 1.4. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 4: Exit-site or tunnel infection

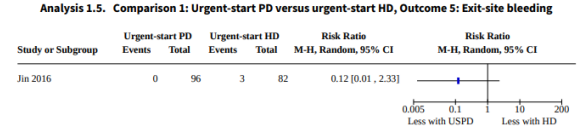
Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Bhalla 2017	6	84	6	335	3.99 [1.32 , 12.05]

Risk Ratio M-H, Random, 95% CI
0.01 0.1 1 10 100
Less with USPD Less with HD


Analysis 1.5. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 5: Exit-site bleeding

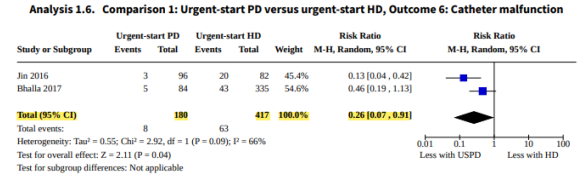
Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	3	82	0.12 [0.01 , 2.33]

Risk Ratio M-H, Random, 95% CI
0.005 0.1 1 10 200
Less with USPD Less with HD


Analysis 1.5. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 5: Exit-site bleeding

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	3	82	0.12 [0.01 , 2.33]

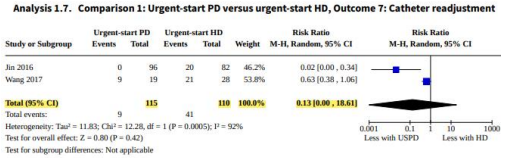
Risk Ratio M-H, Random, 95% CI
0.005 0.1 1 10 200
Less with USPD Less with HD


Analysis 1.6. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 6: Catheter malfunction

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	3	96	20	82	45.4%	0.13 [0.04 , 0.42]
Bhalla 2017	5	84	43	335	54.6%	0.46 [0.19 , 1.13]
Total (95% CI)		**180**		**417**	**100.0%**	**0.26 [0.07 , 0.91]**
Total events:	8		63			

Heterogeneity: Tau² = 0.55; Chi² = 2.92, df = 1 (P = 0.09); I² = 66%
Test for overall effect: Z = 2.11 (P = 0.04)
Test for subgroup differences: Not applicable

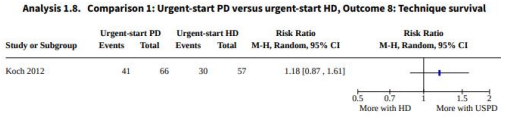
Risk Ratio M-H, Random, 95% CI
0.01 0.1 1 10 100
Less with USPD Less with HD


Analysis 1.7. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 7: Catheter readjustment

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Jin 2016	0	96	20	82	46.2%	0.02 [0.00 , 0.34]
Wang 2017	9	19	21	28	53.8%	0.63 [0.38 , 1.06]
Total (95% CI)		**115**		**110**	**100.0%**	**0.13 [0.00 , 18.61]**
Total events:	9		41			

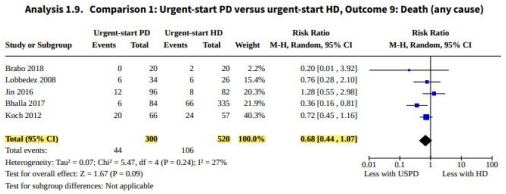
Heterogeneity: Tau² = 11.83; Chi² = 12.28, df = 1 (P = 0.0005); I² = 92%
Test for overall effect: Z = 0.80 (P = 0.42)
Test for subgroup differences: Not applicable

Risk Ratio M-H, Random, 95% CI
0.001 0.1 1 10 1000
Less with USPD Less with HD


Analysis 1.8. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 8: Technique survival

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Koch 2012	41	66	30	57	1.18 [0.87 , 1.61]

Risk Ratio M-H, Random, 95% CI
0.5 0.7 1 1.5 2
More with HD More with USPD


Analysis 1.9. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 9: Death (any cause)

Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Brabo 2018	0	20	2	20	2.2%	0.20 [0.01 , 3.92]
Lobbedez 2008	6	34	6	26	15.4%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	20.3%	1.28 [0.55 , 2.98]
Bhalla 2017	6	84	66	335	21.9%	0.36 [0.16 , 0.81]
Koch 2012	20	66	24	57	40.3%	0.72 [0.45 , 1.16]
Total (95% CI)		**300**		**520**	**100.0%**	**0.68 [0.44 , 1.07]**
Total events:	44		106			

Heterogeneity: Tau² = 0.07; Chi² = 5.47, df = 4 (P = 0.24); I² = 27%
Test for overall effect: Z = 1.67 (P = 0.09)
Test for subgroup differences: Not applicable

Risk Ratio M-H, Random, 95% CI
0.01 0.1 1 10 100
Less with USPD Less with HD

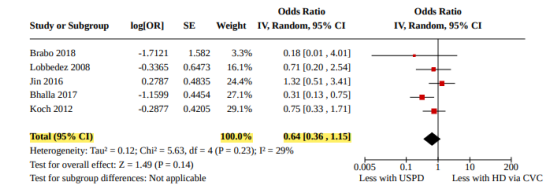
□ Yes ✔ No □ Can't

評讀結果

- Sample size：991
- 未收納RCT
- ＮＮＴ 研究

Importance：7.結果精準嗎？

Analysis 1.10. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 10: Death (any cause): adjusted data

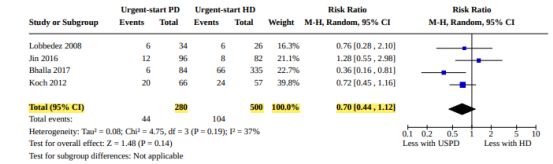


Study or Subgroup	log[OR]	SE	Weight	Odds Ratio IV, Random, 95% CI
Brabo 2018	-1.7121	1.582	3.3%	0.18 [0.01 , 4.01]
Lobbedez 2008	-0.3365	0.6473	16.1%	0.71 [0.20 , 2.54]
Jin 2016	0.2787	0.4835	24.4%	1.32 [0.51 , 3.41]
Bhalla 2017	-1.1599	0.4454	27.1%	0.31 [0.13 , 0.75]
Koch 2012	-0.2877	0.4205	29.1%	0.75 [0.33 , 1.71]
Total (95% CI)			**100.0%**	**0.64 [0.36 , 1.15]**

Heterogeneity: Tau² = 0.12; Chi² = 5.63, df = 4 (P = 0.23); I² = 29%
Test for overall effect: Z = 1.49 (P = 0.14)
Test for subgroup differences: Not applicable

Odds Ratio IV, Random, 95% CI
0.005 0.1 1 10 200
Less with USPD Less with HD via CVC

Analysis 1.11. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 11: Death (any cause): studies with low risk of bias

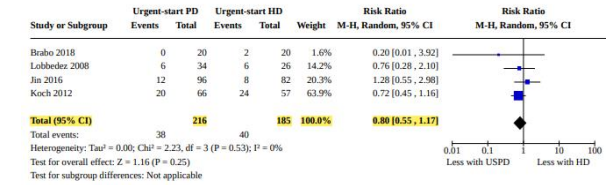


Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Lobbedez 2008	6	34	6	26	16.3%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	21.1%	1.28 [0.55 , 2.98]
Bhalla 2017	6	84	66	335	22.7%	0.36 [0.16 , 0.81]
Koch 2012	20	66	24	57	39.8%	0.72 [0.45 , 1.16]
Total (95% CI)		**280**		**500**	**100.0%**	**0.70 [0.44 , 1.12]**
Total events:	44		104			

Heterogeneity: Tau² = 0.08; Chi² = 4.75, df = 3 (P = 0.19); I² = 37%
Test for overall effect: Z = 1.48 (P = 0.14)
Test for subgroup differences: Not applicable

Risk Ratio M-H, Random, 95% CI
0.1 0.2 0.5 1 2 5 10
Less with USPD Less with HD

Analysis 1.12. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 12: Death (any cause): sensitivity analysis (excluding large studies)

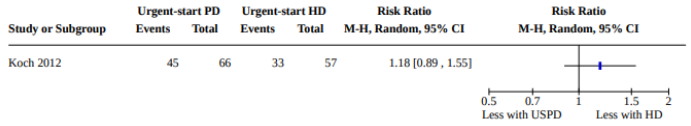


Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Brabo 2018	0	20	2	20	1.6%	0.20 [0.01 , 3.92]
Lobbedez 2008	6	34	6	26	14.2%	0.76 [0.28 , 2.10]
Jin 2016	12	96	8	82	20.3%	1.28 [0.55 , 2.98]
Koch 2012	20	66	24	57	63.9%	0.72 [0.45 , 1.16]
Total (95% CI)		**216**		**185**	**100.0%**	**0.80 [0.55 , 1.17]**
Total events:	38		40			

Heterogeneity: Tau² = 0.00; Chi² = 2.23, df = 3 (P = 0.53); I² = 0%
Test for overall effect: Z = 1.16 (P = 0.25)
Test for subgroup differences: Not applicable

Risk Ratio M-H, Random, 95% CI
0.01 0.1 1 10 100
Less with USPD Less with HD

Analysis 1.13. Comparison 1: Urgent-start PD versus urgent-start HD, Outcome 13: Hospitalisation



Study or Subgroup	Urgent-start PD Events	Total	Urgent-start HD Events	Total	Risk Ratio M-H, Random, 95% CI
Koch 2012	45	66	33	57	1.18 [0.89 , 1.55]

Risk Ratio M-H, Random, 95% CI
0.5 0.7 1 1.5 2
Less with USPD Less with HD

□ Yes ✔ No □ Can't

評讀結果

- Sample size：991
- 未收納RCT
- ＮＮＴ 研究

評定證據等級

V

- 清楚、明確的臨床問題
- 收納適當的研究類型
- 所有研究都被納入
- 納入研究文獻的品質 ▶ 研究品質差
- 結果合併的合理性

I

- 整體結果
- 其精準性 ▶ 研究不精準

Level 2

評定證據等級

考慮降階Level 2

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1 (Level 1*)	Step 2 (Level 2*)	Step 3 (Level 3*)	Step 4 (Level 4*)	Step 5 (Level 5)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review of surveys that allow matching to local circumstances**	Local non-random sample**	Case-series**	n/a
Is this diagnostic or monitoring test accurate? (Diagnosis)	Systematic review of cross sectional studies with consistently applied reference standard and blinding	Individual cross sectional studies with consistently applied reference standard and blinding	Non-consecutive studies, or studies without consistently applied reference standards**	Case-control studies, or "poor or non-independent reference standard**	Mechanism-based reasoning
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-control studies, or poor quality prognostic cohort study**	n/a
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or *n*-of-1 trials	Randomized trial or observational study with dramatic effect	Non-randomized controlled cohort/follow-up study**	Case-series, case-control studies, or historically controlled studies**	Mechanism-based reasoning
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, *n*-of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect	Non-randomized controlled cohort/follow-up study (post-marketing surveillance) provided there are sufficient numbers to rule out a common harm. (For long-term harms the duration of follow-up must be sufficient.)**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or *n*-of-1 trial	Randomized trial or (exceptionally) observational study with dramatic effect			
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial	Non -randomized controlled cohort/follow-up study**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning

□研究品質差 ✔結果不精確 □絕對結果小 □PICO和臨床情境不符 □證據間無一致性

評定個別研究結果的證據品質：GRADE

介入措施

PD、HD

主要結果

Bacteraemia

證據品質

low

降級

- 研究偏差風險
- 結果異質性
- 證據間接性
- 結果精準性
- 具出版偏差

升級

- 效果顯著
- 干擾因素存在仍具效果
- 劑量效應關係

評定個別研究結果的證據品質：GRADE

介入措施

PD、HD

主要結果

Peritonitis、tunnel infection、bleeding、Technique survival、Death、Hospitalisation

證據品質

Very low

降級

- 研究偏差風險 ●
- 結果異質性
- 證據間接性
- 結果精準性 ●
- 具出版偏差

升級

- 效果顯著
- 干擾因素存在仍具效果
- 劑量效應關係

評定個別研究結果的證據品質：GRADE

介入措施

PD、HD

主要結果

Catheter malfunction
Catheter re-adjustment

證據品質

Very low

降級

- 研究偏差風險 ●
- 結果異質性
- 證據間接性 ●
- 結果精準性 ●
- 具出版偏差

升級

- 效果顯著
- 干擾因素存在仍具效果
- 劑量效應關係

Practicality：8.此研究結果是否可應用到當地的族群？

	評讀的文獻	臨床情境
Sex性別	Female:Male約等於1:2	Female
Comorbidity 共病	DM	DM、HTN
Race種族	Not only white	Taiwanese
Age年齡	>18 years old	55
Pathology 疾病	CKD、ESKD	ESKD
介入	PD & HD	PD & HD

Practicality：8.此研究結果是否可應用到當地的族群？

Table 1. Description of studies

Study	Country
Bhalla 2017	USA
Brabo 2018	Brazil
Ghaffari 2015	USA
Jin 2016	China
Koch 2012	Germany
Lobbedez 2008	France
Wang 2017	USA

✔Yes □ No □ Can’t

評讀結果

- 文獻與臨床情境題及年齡相同，種族收納白人及非白人(種族之bias為low risk)
- 能運用於類似病人

Practicality：9.是否所有重要的臨床結果都被考量到？

Summary of findings 1. Summary of findings

Urgent-start peritoneal dialysis versus haemodialysis initiated with a catheter for patients with chronic kidney disease

Patient or population: people with CKD

Settings: community

Intervention: USPD

Comparison: HD initiated with a central venous catheter

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No. of participants (studies)	Quality of the evidence (GRADE)
	Risk with USHD	Risk with USPD			
Bacteraemia up to 6 months	**151 per 1,000**	**20 per 1,000** (6 to 62)	**RR 0.13** (0.04 to 0.41)	301 (2)	⊕⊕⊖⊖ LOW[1]
Peritonitis up to 6 months	**7 per 1,000**	**13 per 1,000** (2 to 98)	**RR 1.78** (0.23 to 13.62)	301 (2)	⊕⊖⊖⊖ VERY LOW[2]
Exit-site or tunnel infection	**18 per 1,000**	**71 per 1,000** (24 to 216)	**RR 3.99** (1.32 to 12.05)	419 (1)	⊕⊖⊖⊖ VERY LOW[2]
Exit-site bleeding	**37 per 1,000**	**4 per 1,000** (0 to 85)	**RR 0.12** (0.01 to 2.33)	178 (1)	⊕⊖⊖⊖ VERY LOW[2]
Catheter malfunction	**151 per 1,000**	**39 per 1,000** (11 to 137)	**RR 0.26** (0.07 to 0.91)	597 (2)	⊕⊖⊖⊖ VERY LOW[3]
Catheter re-adjustment up to 60 months	**373 per 1,000**	**48 per 1,000** (0 to 1,000)	**RR 0.13** (0.00 to 18.61)	225 (2)	⊕⊖⊖⊖ VERY LOW[3]
Technique survival up to 6 months	**526 per 1,000**	**621 per 1,000** (458 to 847)	**RR 1.18** (0.87 to 1.61)	123 (1)	⊕⊖⊖⊖ VERY LOW[2]

✔Yes □ No □ Can't

評讀結果

- 有考慮到各種臨床結果

Practicality：10.付出的傷害和花費換得介入措施所產生的益處是否值得？

Table 3. Cost of urgent dialysis

Study	Variables	USPD	USHD
Brabo 2018	Direct cost/patient over 6 months (US$)	6092 ± 1289	6209 ± 1600
	Dialysis access	3.7%	9.3%
	Dialysis service	80.3%	75.2%
	Hospitalisation	0%	2.1%
	Laboratory tests	1.7%	1.6%
	Treatment cost for infectious complications	1.1%	2.5%
	Medication	9.6%	12.3%

USHD - urgent-start haemodialysis; USPD - urgent-start peritoneal dialysis

Practicality：10.付出的傷害和花費換得介入措施所產生的益處是否值得？

成本效益

✔ □ Yes □ No □ Can’t tell

花費	使用腹膜透析	優點	副作用
機器&藥水	健保4100 其他相關租借費用	減少菌血風險	腹膜炎、導管感染

項目	有形支出	無形支出	總數
看診/住院花費	費用一個月約3000~4000元	等待看診時間 心理負擔	一個月需4000元
輾轉車費	一週一趟250元	等待移動時間	一個月須1000元
保健食品	一週250元	難喝	一個月須1000元

Practicality：付出的傷害和花費換得介入措施所產生的益處是否值得？

其他選擇

✔ □ Yes □ No □ Can’t tell

選擇	好處	壞處	證據等級
民俗療法	清熱消腫排膿	效果因人而異	Level 3
正念減壓	降低焦慮	治療效果有限	Level 3
飲食療法	調節身體機能	治療效果有限	Level 3

No	CASP questions	Yes/No
1	此篇系統性文獻回顧是否問了一個清楚、明確的問題?	Yes
2	作者是否尋找適當研究型態的文獻?	Yes
3	你認為所有重要且相關的研究都被納入?	Yes
4	系統性文獻回顧的作者是否評估所納入研究文獻的品質?	Yes
5	如果作者將研究結果進行合併，這樣的合併是否合理?	Yes
6	這篇系統性文獻回顧的整體結果為何？	Yes
7	結果精準嗎？	No
8	此研究結果是否可應用到當地的族群？	Yes
9	是否所有重要的臨床結果都有被考量到？	Yes
10	付出的傷害和花費換得介入措施所產生的益處是否值得？	Yes

5A-4
Apply
臨床應用

臨床應用

透析頻率	1
透析費用	健保價4100/次

成本效益比

ICER=△cost/△effectiveness=similar

處置	花費	效果
PD	4100/6092	7.13 QALY
HD	4100/6209	6.58 QALY

成本效益比

COPE
=NNT x NNT時間 x 治療所需費用
（付出這個價錢以減少一次事件發生）
=(1/0.13) x 1 x 4100
=31538
（以菌血症為例）

5A-5
Audit
執行決策

多方觀點

實證醫學

證據等級：level 2

GRADE：low ~ very low

病人偏好

病人想了解緊急透析使用腹膜透析和血液透析差異為何？有沒有副作用？方便性？

效益衡量

腹膜透析可以減少菌血症機率，相關副作用如腹膜炎和導管感染風險須考慮

資源費用

透析治療有健保給付，緊急透析後有住院的費用成本，若後續在家腹膜透析會有機器租金成本

文獻查證: 利>弊的確定性

病人知情偏好的確定性	文獻查證: 利>弊的確定性 是	文獻查證: 利>弊的確定性 否
是	我們建議應該做 並解釋行動方案	**我們建議考慮做** **提供選項輔助決策**
否	我們建議考慮做 提供選項輔助決策	我們建議考慮做 提供選項輔助決策

Reference: 李宜恭醫師《醫策會SDM上課教材》

回答病人問題 - 以去學術化術語方式

林女士和家屬您好，經過我們團隊縝密的實證搜尋後，目前現有最佳證據是由系統性回顧文獻支持，腹膜透析和血液透析治療兩者同為腎臟替代療法，可代替部分腎臟功能，緊急腹膜透析使用可以減少菌血症機率，但會增加腹膜炎和導管感染風險，有健保給付，糖尿病為高危險族群，注意飲食控制和記錄透析情況


謝謝各位
評審聆聽