

2023年度

嘉義基督教醫院EBM文獻查證競賽

林口 X 嘉義 X 高雄長庚紀念醫院聯隊



團隊介紹



陳慕溪



林純安



葉日中



梁瀚陽

長庚大學中西醫雙主修學系

高長PGY

林長PGY

高長PGY

嘉長PGY

團隊介紹



高長放射腫瘤科 R1



團隊介紹



團隊介紹



長庚 Webex 視訊系統通知

星期二 下午 04:17

劉芷廷君您好：

以下為您申請的視訊會議資料：

會議類型：一般會議

會議主題：discussion

會議時間：2023/05/18 21:30

會議網址：<https://cgmh.webex.com/cgmh/j.php?MTID=m936347b181cd84feb94f7facfde2e40d>

主持人金鑰：225902

會議室 ID：25196079728

會議密碼：xP8by775

備註：大型會議廳、簡報室視訊主機可撥號至：210.4.202.4，並輸入會議室ID後按#以進入會議，詳細說明請參閱登記網頁文件。

純安

4/25, 26 20:00 下次討論

@葉日中你 25 可以嗎？

大家分別找出 3 個 PICO 跟對應的 SR or MA



以上

APR 20, 9:47 PM

← 日中 replied to 純安

@葉日中你 25 可以嗎？



25 可以 如果大家方便比較希望 21:30 如果不行就 20:00



團隊介紹

瀚陽



先詢問一下大家對於實證的了解程度大概到哪邊？都不懂沒關係，只是想抓一下要從哪邊開始講起😂 怕耽誤大家時間

← 日中 replied to 瀚陽

先詢問一下大家對於實證的了解程度大概到哪邊？都不懂沒關係，只是想抓一下要從哪邊開始講起😂 怕耽誤大家時間



大概就 PICO 金字塔 然後 CASP 十個問題評讀論文 沒了😂



團隊介紹

瀚陽



哈囉各位 想問大家明天討論如果改後天方便嗎

瀚陽

我從昨天半夜開始大爆咳 低燒



今天先回去篩一下吃個藥，想說明天看看情況，後天再約？

瀚陽



如果跟現在一樣我可能會邊講邊咳 😊



純安

我都可以



我周四才值班

APR 24, 6:02 PM

日中



我後天值班 😊



團隊介紹

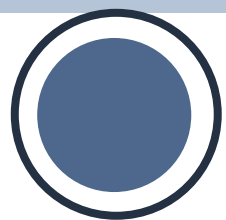
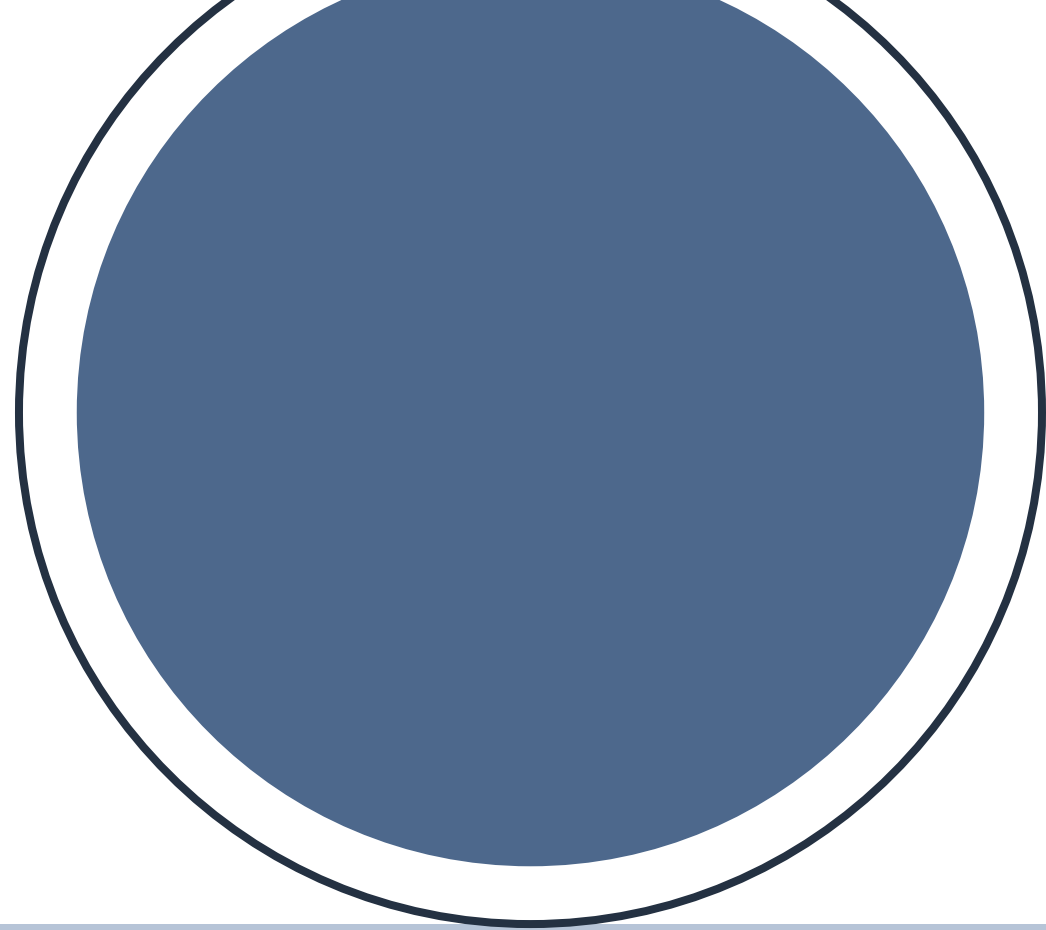


設定PICO
文獻搜尋



評讀證據
效益評估

Ask



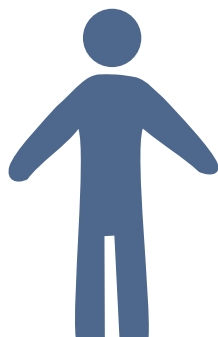
問題

65歲的江先生曾經中風過，雖然不嚴重，但過去五年都在家休養，最近因為反覆性泌尿道感染，住院接受抗生素治療，才剛出院不久。

前天因為發燒、腹痛、腹瀉到醫院急診，醫師診斷為感染性腹瀉，因為長期使用抗生素，醫師懷疑與困難梭狀桿菌 (*Clostridium difficile*) 有關。

除了症狀與病徵之外，其他檢驗，包括糞便細菌培養及毒素檢驗都在進行中，他想問根據這些症狀與病徵，可不可以預測這位病人罹患困難梭狀桿菌的機率？有一種叫做**風險評估模式 (risk prediction model)** 的工具，準確嗎？另外，他之前聽到一種新療法，叫做**糞便菌叢移植法 (fecal microbiota transplantation)** 將新鮮糞便純化後的菌叢，用口服或管灌的方式移植到病人身上，對付難治療的困難梭狀桿菌感染。

他想問，這種治療有效嗎？會不會有副作用？做這項治療需要做哪些事？注意什麼？病人與家屬對於一直用抗生素治療效果不佳感到焦慮，對於新療法也有嘗試的意願。



曾住院接受
抗生素治療

江先生

健康狀況：65/M，曾中風，反覆泌尿道感染

病狀：抗生素治療後不久，因發燒、腹瀉，

診斷為感染性腹瀉，疑似困梭桿菌感染



可以根據症狀與病徵，預測罹患困梭桿菌感染的機率嗎？



糞便菌叢移植法的治療效果如何？
副作用如何？有哪些注意事項呢？

問題
Ask

臨床情境

背景資訊

提出問題

根據

DynaMed

資料顯示

診斷為困難梭狀桿菌感染

需要有「症狀」+「檢驗結果positive」

Making the Diagnosis

- diagnosis based on clinical and laboratory findings ^{1,3}
 - [symptoms](#)
 - usually diarrhea, defined as ≥ 3 unformed stools in ≤ 24 hours
 - diarrhea may be absent in patients with ileus
 - confirmation by either of
 - [stool test](#) positive for *Clostridioides (Clostridium) difficile* toxins or toxigenic *C. difficile*
 - pseudomembranous colitis indicated by [histopathology](#) or [lower gastrointestinal endoscopy](#) (rarely needed)



65/M
江先生

尚未確診困難梭感染

檢索
Acquire

評讀
Appraise

應用
Apply

問題
Ask

臨床情境

背景資訊

提出問題

根據

DynaMed

資料顯示

可以依據「WBC」,「Creatinine」,「臨床症狀」

區分嚴重程度

- Infectious Diseases Society of America and Society for Healthcare Epidemiology of America (IDSA/SHEA) guideline categorizes *Clostridioides (Clostridium) difficile* disease as nonsevere, severe, or fulminant ¹
 - nonsevere disease defined as both
 - leukocytosis with white blood cell count $\leq 15,000$ cells/mL and
 - serum creatinine level < 1.5 mg/dL
 - severe disease defined as either
 - leukocytosis with white blood cell count $\geq 15,000$ cells/mL or
 - serum creatinine level > 1.5 mg/dL
 - fulminant disease defined as presence of
 - hypotension or shock
 - ileus
 - megacolon



65/M
江先生

嚴重度未知

檢索
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評讀
Appraise

應用
Apply

臨床情境

背景資訊

提出問題

根據 UpToDate[®] 資料顯示

確診困難梭感染後的治療流程

Treatment of Clostridioides difficile infection (CDI) in adults	
Clinical condition	Treatment
Nonfulminant disease	
Initial episode (nonsevere or severe disease)	Management of an initial CDI episode consists of treatment with an antibiotic regimen.
Nonsevere disease is supported by the following clinical data: White blood cell count $\leq 15,000$ cells/mL and serum creatinine level < 1.5 mg/dL. Severe disease* is supported by the following clinical data: White blood cell count $> 15,000$ cells/mL and/or serum creatinine level ≥ 1.5 mg/dL.	Antibiotic regimens: - Fidaxomicin[†] 200 mg orally twice daily for 10 days - Vancomycin[‡] 125 mg orally 4 times daily for 10 days - For nonsevere disease, alternative regimen if above agents are unavailable: - Metronidazole[§] 500 mg orally 3 times daily for 10 to 14 days
Recurrent episode[§]	Management of a recurrent CDI episode consists of treatment with an antibiotic regimen, in addition to adjunctive bezlotoxumab [¶] if feasible.
First recurrence	Antibiotic regimens: - Fidaxomicin[†] 200 mg orally twice daily for 10 days, OR 200 mg orally twice daily for 5 days, followed by once every other day for 20 days - Vancomycin[‡] in a tapered and pulsed regimen, for example: 125 mg orally 4 times daily for 10 to 14 days, then 125 mg orally 2 times daily for 7 days, then 125 mg orally once daily for 7 days, then 125 mg orally every 2 to 3 days for 2 to 8 weeks - Vancomycin[‡] 125 mg orally 4 times daily for 10 days Adjunctive treatment: Bezlotoxumab[¶] 10 mg/kg intravenously, given once during administration of standard antibiotic regimen.
Second or subsequent recurrence	Antibiotic regimens: - Fidaxomicin[†] 200 mg orally twice daily for 10 days, OR 200 mg orally twice daily for 5 days, followed by once every other day for 20 days - Vancomycin[‡] in a tapered and pulsed regimen (example as above) - Vancomycin[‡] followed by rifaximin: - Vancomycin 125 mg orally 4 times daily by mouth for 10 days, then - Rifaximin 400 mg orally 3 times daily for 20 days Adjunctive treatment: Bezlotoxumab[¶] 10 mg/kg intravenously, given once during administration of standard antibiotic regimen. Role of fecal microbiota transplantation (FMT): For patients who have received appropriate antibiotic treatment for at least 3 CDI episodes (ie, initial episode plus 2 recurrences), who subsequently present with a fourth or further CDI episode (third or subsequent recurrence), we favor FMT in regions where available*. Pending referral for FMT, we treat with an antibiotic regimen as outlined above.
Fulminant disease	
Fulminant disease* is supported by the following clinical data: Hypotension or shock, ileus, megacolon	- Absence of ileus: Enteric vancomycin plus parenteral metronidazole*: - Vancomycin[‡] 500 mg orally or via nasogastric tube 4 times daily, AND - Metronidazole 500 mg intravenously every 8 hours - If ileus is present, additional considerations include: - FMT (administered rectally)** OR - Rectal vancomycin (administered as a retention enema 500 mg in 100 mL normal saline per rectum; retained for as long as possible and readministered every 6 hours)**

第一步：停用不必要的抗生素

第二步：Supportive care

第三步：一線治療給抗生素 Vancomycin/ Fidaxomicin
第一次復發考慮「Bezlotoxumab」
再次復發考慮「糞便移植」

問題
Ask

臨床情境

背景資訊

提出問題

根據 **UpToDate®** 資料顯示

感染性腹瀉

Shigella Infection; Amoebic Dysentery

困難梭狀桿菌感染

初次感染

嗎？

二次感染

反覆感染



65/M
江先生

再次復發考慮「糞便移植」

檢索
Acquire

評讀
Appraise

應用
Apply



第一個PICO

疑似困難梭狀桿菌感染
成年男性，中風病史

依據臨床症狀診斷

依據糞便培養結果診斷

診斷困難梭狀桿菌感染
的準確率，likelihood ratio

這是一個 診斷型 的問題

第二個PICO

確診困難梭狀桿菌感染
成年男性，中風病史

使用糞便菌叢移植法
治療的病人

使用抗生素或是安慰劑的病人

有效性(疾病治癒率 NNT)、
安全性(副作用 NNH)

這是一個 治療型 的問題

問題 Ask

臨床情境

背景資訊

提出問題

檢索 Acquire

P

I

C

O

評讀 Appraise

應用 Apply

第一個PICO

疑似困難梭狀桿菌感染
成年男性，中風病史
希望盡快康復
不要再用抗生素



依據臨床症狀診斷
依據糞便培養結果診斷

曾住院接受
抗生素治療

診斷的準確性 (diagnostic ratio)

這是一個診斷型的問題

第二個PICO

確診困難梭狀桿菌感染
成年男性，中風病史

使用糞便菌叢移植法
治療的病人

使用抗生素或是安慰劑的病人

有效性(疾病治癒率 NNT)、
安全性(副作用 NNH)

這是一個治療型的問題

P

I

C

O

第一個PICO

感染性腹瀉

困難梭狀桿菌感染

初次感染

二次感染

反覆感染

這是一個診斷型的問題

第二個PICO

確診困難梭狀桿菌感染

成年男性，中風病史

使用糞便菌叢移植法

治療的病人

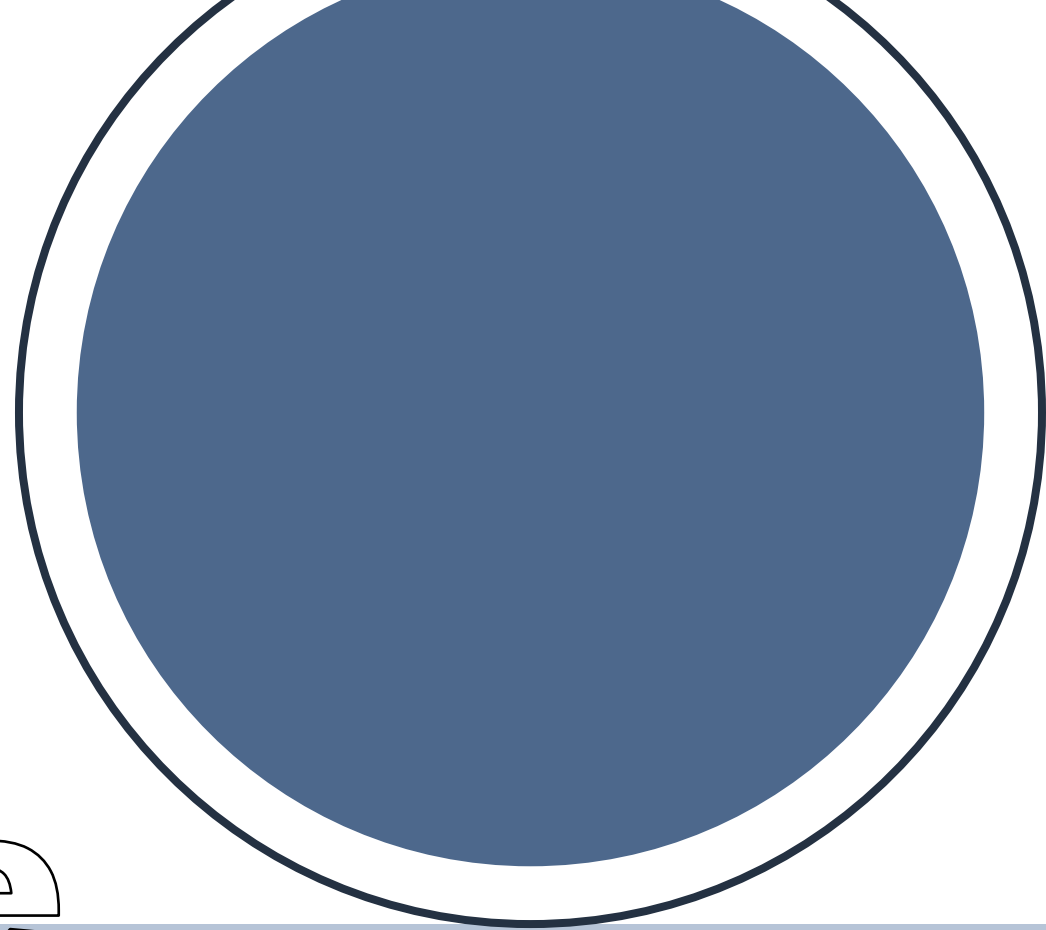
使用抗生素或是安慰劑的病人

有效性(疾病治癒率 NNT)、

安全性(副作用 NNH)

這是一個治療型的問題

Acquire



檢索

搜尋時的關鍵字設定

	自然語言		同義字	MeSH term
	中文	英文		
P	成年男性 困難梭狀桿菌感染	Adults, male, Primary Clostridium difficile infection	First/ Initial/ First episode Clostridium infection	Clostridium Infections
I	糞便菌叢移植	Fecal microbiota transplantation	Fecal transplant, Donor feces infusion, Intestinal microbiota transplant	Fecal microbiota transplantation
C	安慰劑, 萬古黴素	Placebo, Vancomycin	Placebo, Vancomycin Hydroc hlride, Vancomycin Sulfate	Placebo, Vancomycin
O	有效性(疾病治癒率)、 安全性(副作用)	Effectiveness Adverse effect	Efficacy, Clinical, Effectiveness, Treatment	Treatment Outcome

問題
Ask

檢索策略

檢索
Acquire

CDSS

Systems

從次級資料庫
查找背景知識

UpToDate, DynaMed,
BMJ clinical evidence

Summaries

EBM, EBN, DARE,
EBMH

Synopses of Syntheses

Cochrane review,
PLUS

Syntheses

ACP journal club

Synopses of studies

從初級資料庫
選擇最佳文獻評讀

Pubmed, EMbase

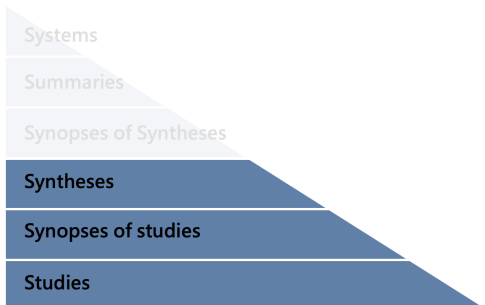
Studies

評讀
Appraise

應用
Apply

使用檢索技巧提升搜索效率

檢索
Acquire



預先設定
篩選器

擬訂關鍵字
與同義字

善用
布林邏輯
語法
(AND/
OR/ NOT)

系統性綜論
治療型問題
預後型問題
診斷型問題

語法引用自

PubMed.gov
Clinical Queries



各資料庫搜尋結果交叉比對

評讀
Appraise

應用
Apply

問題
Ask

搜尋歷程

感染性腹瀉

困難梭狀桿菌感染

初次感染

二次感染

反覆感染

搜尋初次感染的meta analysis and SR

檢索
Acquire



Meta-Analysis > J Clin Gastroenterol. 2022 Nov-Dec;56(10):881-888.
doi: 10.1097/MCG.0000000000001610. Epub 2021 Sep 9.

Fecal Microbiota Transplantation and Medical Therapy for Clostridium difficile Infection : Meta-analysis of Randomized Controlled Trials

Tanveer Singh¹, Prabhjot Bedi², Karandeep Bumrah², Darshan Gandhi³, Tanureet Arora⁴, Nikita Verma⁵, Mary Schleicher⁶, Manoj P Rai⁷, Rajat Garg¹, Beni Verma¹, Madhusudhan R Sanaka⁸

Affiliations + expand
PMID: 34516460 DOI: 10.1097/MCG.0000000000001610

bias 過高
且異質性高(I²=78% & 82%)

Letters in Applied Microbiology

Letters in Applied Microbiology ISSN 0266-8254

REVIEW ARTICLE

Effectiveness of fecal microbiota transplant for the treatment of *Clostridioides difficile* diarrhea: a systematic review and meta-analysis

R.Á. Pomares Bascuñana¹, V. Veses²  and C.C. Sheth¹ 

1 Department of Medicine, Faculty of Health Sciences, Universidad Cardenal Herrera, CEU Universities, Valencia, Spain
2 Department of Biomedical Sciences, Faculty of Health Sciences, Universidad Cardenal Herrera, CEU Universities, Valencia, Spain

並沒有把primary 以及 recurrence 分開討論

評讀
Appraise

應用
Apply

問題
Ask

搜尋歷程

檢索
Acquire



應用
Apply



感染性腹瀉

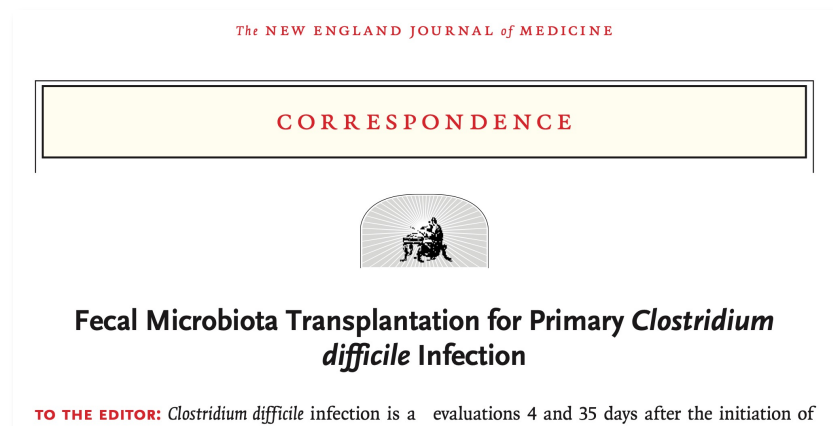
困難梭狀桿菌感染

初次感染

二次感染

反覆感染

搜尋初次感染的RCT



letter to the editor
總收案數僅20人
有待未來trial

Faecal microbiota transplantation for first or second
Clostridioides difficile infection (EarlyFMT): a randomised,
double-blind, placebo-controlled trial

Simon Mark Dahl Baunwall, Sara Ellegaard Andreasen, Mette Mejlby Hansen, Jens Kelsen, Katrine Lundby Høyer, Nina Rågård,
Lotte Lindgreen Eriksen, Sidsel Støt, Tone Rubak, Else Marie Skjode Damsgaard, Susan Mikkelsen, Christian Erikstrup, Jens Frederik Dahlerup,
Christian Lodberg Hvas

lost f/u rate 38%
控制組failed, interim analysis

問題
Ask

檢索
Acquire

評讀
Appraise

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Apply

搜尋歷程



感染性腹瀉

困難梭狀桿菌感染

初次感染

二次感染

反覆感染

Search	Actions	Details	Query	Results	Time
#27	...	>	Search: (#18) NOT (#19 OR #20 OR #21) Filters: Randomized Controlled Trial, in the last 5 years	11	20:46:58

Search	Actions	Details	Query	Results	Time
#26	...	>	Search: (#18) NOT (#19 OR #20 OR #21) Filters: Meta-Analysis, Systematic Review, in the last 5 years	13	20:26:07
#25	...	>	Search: (#18) NOT (#19 OR #20 OR #21) Filters: Meta-Analysis, in the last 5 years	6	20:26:03
#24	...	>	Search: (#18) NOT (#19 OR #20 OR #21) Filters: in the last 5 years	154	20:25:38
#23	...	>	Search: (#18) NOT (#19 OR #20 OR #21)	285	20:25:33
#22	...	>	Search: #19 OR #20 OR #21	158,887	20:24:56
#21	...	>	Search: immunocompromised[Title/Abstract]	41,717	20:24:39
#20	...	>	Search: Inflammatory Bowel Diseases[MeSH Terms]	96,175	20:23:53
#19	...	>	Search: inflammatory bowel disease[Title/Abstract]	56,643	20:23:42

Search	Actions	Details	Query	Results	Time
#18	...	>	Search: #12 AND #17	374	20:15:52
#17	...	>	Search: #13 OR #14 OR #15 OR #16	4,918	20:15:35
#16	...	>	Search: Infusion Donor Feces	4,918	20:14:47
#15	...	>	Search: fecal microbiota transplantation[MeSH Terms]	2,717	20:13:50
#14	...	>	Search: "fecal microbiota transplantation"	4,331	20:13:29
#13	...	>	Search: fecal microbiota transplantation	4,902	20:13:16
#12	...	>	Search: #6 AND #11	6,460	20:12:53
#11	...	>	Search: #7 OR #8 OR #9 OR #10	6,403,219	20:12:29
#10	...	>	Search: first episode	63,280	20:11:50
#9	...	>	Search: initial	1,744,046	20:11:38
#8	...	>	Search: primary	2,031,561	20:11:26
#7	...	>	Search: first	3,386,986	20:11:18
#6	...	>	Search: #1 OR #3 OR #4 OR #5	39,466	20:10:59
#5	...	>	Search: clostridium infections[MeSH Terms]	32,582	20:10:27
#4	...	>	Search: clostridium infection*	20,396	20:09:44
#3	...	>	Search: "clostridium infections"	10,622	20:09:20
#1	...	>	Search: clostridium infection	39,057	20:08:37

問題
Ask

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搜尋歷程



感染性腹瀉

困難梭狀桿菌感染

初次感染

二次感染

反覆感染

和Pubmed相同的4篇

☐	#17	#3 AND #7 AND #14 AND [randomized controlled trial]/lim AND ([adolescent]/lim OR [adult]/lim OR [young adult]/lim OR [middle aged]/lim OR [aged]/lim OR [very elderly]/lim) AND [humans]/lim AND [2018-2023]/py	38
☐	#16	#3 AND #7 AND #14 AND ([cochrane review]/lim OR [systematic review]/lim OR [meta analysis]/lim) AND ([adolescent]/lim OR [adult]/lim OR [young adult]/lim OR [middle aged]/lim OR [aged]/lim OR [very elderly]/lim) AND [humans]/lim AND [2018-2023]/py	20
☐	#15	#3 AND #7 AND #14	910
☐	#14	#10 OR #11 OR #12 OR #13	7,885,445
☐	#13	first AND episode	58,413
☐	#12	initial	1,276,531
☐	#11	primary	2,883,667
☐	#10	first	4,609,260
☐	#9	#3 AND #7 AND ([systematic review]/lim OR [meta analysis]/lim) AND [humans]/lim AND [2018-2023]/py AND ([adult]/lim OR [young adult]/lim OR [middle aged]/lim OR [aged]/lim OR [very elderly]/lim)	44
☐	#8	#3 AND #7	2,851
☐	#7	#4 OR #5 OR #6	60,384
☐	#6	clostridium AND infection	35,355
☐	#5	'clostridium infection'	2,186
☐	#4	'clostridium infection'/exp	48,111
☐	#3	#1 OR #2	10,119
☐	#2	fecal AND microbiota AND transplantation	10,119
☐	#1	'fecal microbiota transplantation'/exp OR 'fecal microbiota transplantation'	9,447

搜尋時的關鍵字設定

感染性腹瀉

P

中文

自然語言

英文

成年男性

困難梭狀桿菌感染

Adults, male,
~~Primary~~
Clostridium
difficile infection

First
episode

困難梭狀桿菌感染

初次感染

二次感染

反覆感染

I

糞便菌叢移植

Fecal microbiota
transplantation

Fecal
Donor
Intestine

C

安慰劑, 萬古黴素

Placebo,
Vancomycin

Vancomycin Hydroc
hloride, Vancomycin
Sulfate

Placebo,
Vancomycin

O

有效性(疾病治癒率)、
安全性(副作用)

Effectiveness
Adverse effect

Efficacy, Clinical,
Effectiveness,
Treatment

Treatment
Outcome

搜尋歷程

MeSH descriptor 聯集原單字



P	-	+	#1	(Clostridium)	S▼	Limits	2477
	(Word variations have been searched)						
I	-	+	#2	MeSH descriptor: [Clostridium Infections] explode all trees		MeSH▼	716
	-	+	#3	fecal microbiota transplantation		Limits	815
	-	+	#4	MeSH descriptor: [Fecal Microbiota Transplantation] explode all trees		MeSH▼	162
	-	+	#5	MeSH descriptor: [Adult] explode all trees		MeSH▼	584405
	-	+	#6	#1 OR #2		Limits	2858
	-	+	#7	#3 OR #4		Limits	815
	-	+	#8	#5 AND #6 AND #7		Limits	35

Cochrane Reviews	Cochrane Protocols	Trials	Editorials	Special Collections	Clinical Answers
2	0	33	0	0	0

2 Cochrane Reviews matching "#8 - #5 AND #6 AND #7"

Cochrane Database of Systematic Reviews
Issue 5 of 12, May 2023

☐ Select all (2) Export selected citation(s) [Show all previews](#)

Order by Relevancy ▼

Result

- ☐ **Fecal microbiota transplantation for the treatment of recurrent *Clostridioides difficile* (*Clostridium difficile*)**
 Nathan Zev Minkoff, Scheherzade Aslam, Melissa Medina, Emily E Tanner-Smith, Joseph P Zackular, Sari Acra, Marit Nicholson, Aamer Imdad
 Intervention Review 25 April 2023
[Show PICOs ▼](#) [Show preview ▼](#)

搜尋歷程

MeSH terms 聯集原單字

檢索
Acquire



評讀
Appraise

應用
Apply

Search	Actions	Details	Query	Results	Time
#13	...	>	Search: #5 AND #10 Filters: Systematic Review, in the last 5 years	43	11:07:26
#12	...	>	Search: #5 AND #10 Filters: in the last 5 years	720	11:07:22
#11	...	>	Search: #5 AND #10	1,531	07:26:18
#10	...	>	Search: #6 OR #7 OR #8 OR #9	6,522	07:22:13
#9	...	>	Search: fecal microbio* transplantation	6,522	07:13:56
#8	...	>	Search: " fecal microbiota transplantation "	4,313	07:13:40
#7	...	>	Search: fecal microbiota transplantation	4,882	07:13:26
#6	...	>	Search: fecal microbiota transplantation [MeSH Terms]	2,713	07:12:46
#5	...	>	Search: #1 OR #2 or #3 OR #4	39,452	06:59:24
#4	...	>	Search: clostridium infection*	20,387	06:58:14
#3	...	>	Search: " clostridium infections "	10,617	06:58:02
#2	...	>	Search: clostridium infections	36,142	06:57:30
#1	...	>	Search: clostridium infections [MeSH Terms]	32,572	06:57:02



搜尋歷程



Emtree/exploded聯集原單字

☐	#9	#3 AND #7 AND ([systematic review]/lim OR [meta analysis]/lim) AND [humans]/lim AND [2018-2023]/py AND ([adult]/lim OR [young adult]/lim OR [middle aged]/lim OR [aged]/lim OR [very elderly]/lim)	44
☐	#8	#3 AND #7	2,851
☐	#7	#4 OR #5 OR #6	60,384
☐	#6	clostridium AND infection	35,355
☐	#5	'clostridium infection'	2,186
☐	#4	'clostridium infection'/exp	48,111
☐	#3	#1 OR #2	10,119
☐	#2	fecal AND microbiota AND transplantation	10,119
☐	#1	'fecal microbiota transplantation'/exp OR 'fecal microbiota transplantation'	9,447



問題
Ask

檢索
Acquire

評讀
Appraise

應用
Apply

搜尋歷程



一般檢索

全文檢索

於下方輸入查詢條件

編輯

清除

P

I

困難梭狀桿菌感染

所有欄位

AND

糞便微生物移植

所有欄位

AND

所有欄位

> > 增加查詢欄位

查詢

清除

搜尋語言

☒ 所有文章

☐ 繁體中文

☐ 簡體中文

☐ 英文

☐ 其他語言

文獻類型

☒ 所有類型

☐ 電子期刊

共 3 筆, 1-3 筆

出版地區

☒ 所有地區

☐ 台灣

☐ 中國

年代

☒ 不限

☐ 1999 以前

到

2023

☐

電子全文

☒ 不限

☐ 限有全文

☐ 單

每頁顯示筆數

☐ 10

☒ 20

☐ 50

相關程度最高

☐ 書目匯出

☒ 加入收藏

☐ 加入購物車

相關程度最高

1

糞便微生物移植以及益生菌的治療組合

黃盈綺；林邑璵；
臨床醫學月刊 81卷6期 (2018/06), 320-325
糞便微生物移植(fecal microbial transplantation)；益生菌(probiotics)；困難梭狀桿菌(Clostridium difficile)；
潰瘍性結腸炎(ulcerative colitis)；
10.6666/ClinMed.201806_81(6).0058
預覽摘要 | 參考文獻 (10)

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全文下載

2

糞便微生物移植 (Fecal Microbiota Transplantation) 於困難梭狀芽孢桿菌 (Clostridium difficile) 腸炎的應用

李倩瑜(Chien-Yu Lee)；鄭舒倖(Shu-Hsing Cheng)；鄭健禹(Jian-Yu Cheng)；
感染控制雜誌 24卷1期 (2014/02), 26-32
反覆性困難梭狀芽孢桿菌腸炎；糞便微生物移植；C. difficile infections；fecal microbiota transplantation
10.6526/ICJ.201402_24(1).0004
預覽摘要

加入收藏

全文下載

3

以糞便微生物移植治療困難梭狀桿菌

林宜君；
感染控制雜誌 28卷3期 (2018/06), 139-141

加入收藏

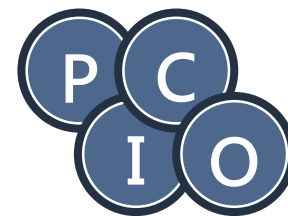
全文下載

問題
Ask

搜尋歷程

Systematic
Review

符合
臨床問題



搜尋結果

檢索
Acquire



35篇

2篇

1篇



140篇

43篇

14篇



Embase

2851篇

44篇

14篇



3篇

0篇

0篇

交叉比對後
排除重複(15)

14篇

評讀
Appraise

應用
Apply

不選擇其他篇的理由

Journal	Title	Year	IF	解釋
Cochrane Database Syst Rev	Fecal microbiota transplantation for the treatment of recurrent Clostridioides difficile (Clostridium difficile)	2023	9.27 Q1	納入文獻全收錄RCT 年份新 Q1
Dig Dis Sci	Systematic Review with Meta-Analysis: Fecal Microbiota Transplantation for Severe or Fulminant Clostridioides difficile.	2022	3.2 Q3	侷限討論 fulminant and severe CDI 與case情形較不符
J Clin Gastroenterol	Oral Fecal Microbiota Transplant Capsules Are Safe and Effective for Recurrent Clostridioides difficile Infection: A Systematic Review and Meta-Analysis.	2021	3.06 Q3	侷限討論 oral FMT 納入非RCT研究
PLoS One	Fecal microbiota transplantation for treatment of recurrent C. difficile infection: An updated randomized controlled trial meta-analysis.	2019	3.24 Q2	侷限於 fresh FMT 年代相對較舊
J Clin Gastroenterol	Fecal Microbiota Transplantation and Medical Therapy for Clostridium difficile Infection : Meta-analysis of Randomized Controlled Trials	2022	3.06 Q3	有收初次以及反覆感染 收錄RCT之ROB較高

不選擇其他篇的理由

Journal	Title	Year	IF	解釋
Cureus	Role of Fecal Microbiota Transplantation in Reducing Clostridioides difficile Infection-Associated Morbidity and Mortality: A Systematic Review	2022	-	Without IF 納入非RCT研究
Cureus	Fecal Microbiota Transplant in Recurrent Clostridium Difficile Infections: A Systematic Review.	2022	-	Without IF 無收錄RCT
Lett Appl Microbiol	Effectiveness of fecal microbiota transplant for the treatment of Clostridioides difficile diarrhea: a systematic review and meta-analysis.	2021	2.86 Q3	納入非RCT研究
Clin Infect Dis	Low Cure Rates in Controlled Trials of Fecal Microbiota Transplantation for Recurrent Clostridium difficile Infection: A Systematic Review and Meta-analysis.	2019	9.08 Q1	主要納入非RCT研究 年代相對較舊
E Clinical Medicine	Faecal microbiota transplantation for recurrent Clostridioides difficile infection: An updated systematic review and meta-analysis	2020	3.59 Q1	納入非RCT研究

不選擇其他篇的理由

Journal	Title	Year	IF	解釋
United European Gastroenterol J	A network meta-analysis of randomized controlled trials exploring the role of fecal microbiota transplantation in recurrent Clostridium difficile infection.	2019	5.09 Q2	NMA 年代相對較舊
Eur J Gastroenterol Hepatol	Comparing fecal microbiota transplantation to standard-of-care treatment for recurrent Clostridium difficile infection: a systematic review and meta-analysis.	2018	2.54 Q4	年代相對較舊 Q4
Eur J Gastroenterol Hepatol	Safety and efficacy of encapsulated fecal microbiota transplantation for recurrent Clostridium difficile infection: a systematic review	2018	2.57 Q4	年代相對較舊 Q4
Expert Rev Anti Infect Ther	Fecal microbiota transplantation for treatment of patients with recurrent Clostridioides difficile infection.	2020	5.09 Q2	僅為專家建議

最佳文獻

Cochrane Database of Systematic Reviews | Review - Intervention

Fecal microbiota transplantation for the treatment of recurrent *Clostridioides difficile* (*Clostridium difficile*)

Nathan Zev Minkoff, Scheherzade Aslam, Melissa Medina, Emily E Tanner-Smith, Joseph P Zackular, Sari Acra, Maribeth R Nicholson, ✉ Aamer Imdad Authors' declarations of interest

Version published: 25 April 2023 Version history

<https://doi-org.lib3.cgmh.org.tw/30443/10.1002/14651858.CD013871.pub2> ↗

理由: ☒ 最符合臨床問題

☒ 最佳研究設計: Systematic Review

☒ 發表年份較新: 2023.04.25

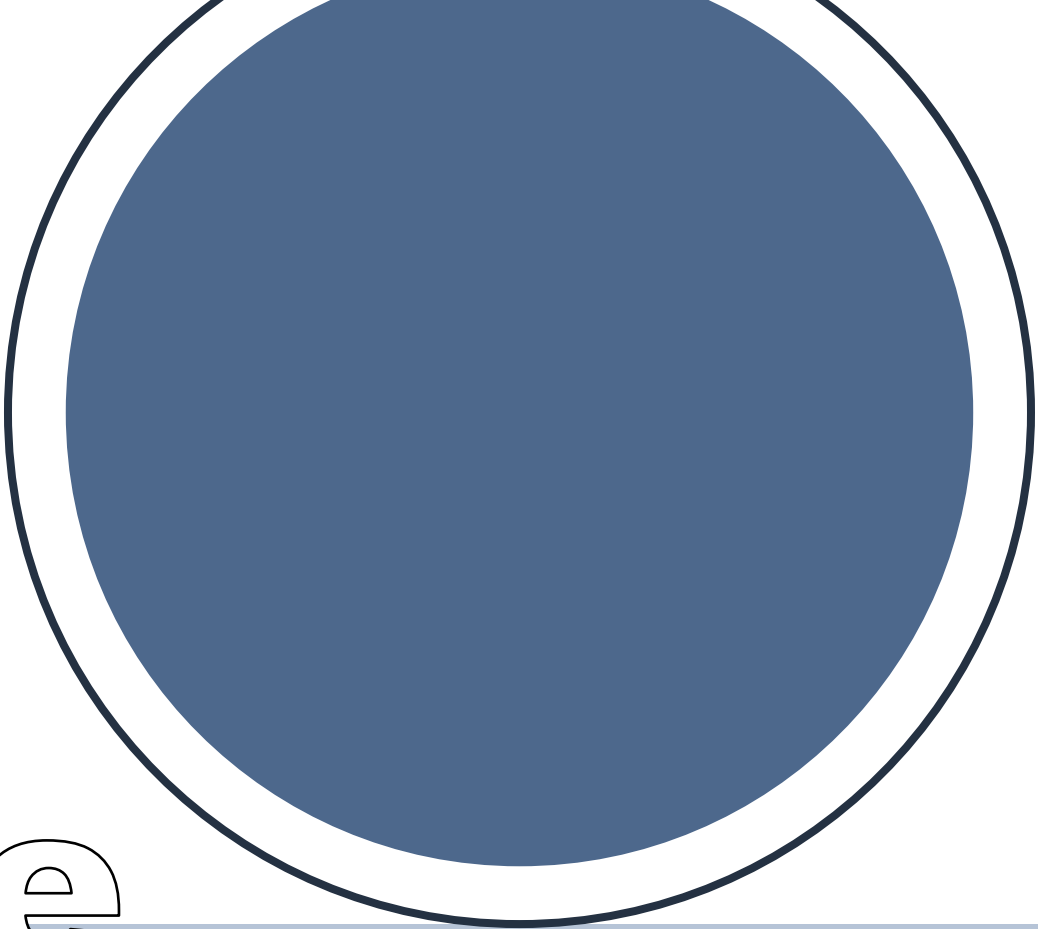
☒ 有全文可供評讀

☒ 發表在較佳之期刊: Cochrane Database of Systematic Reviews, IF: 9.27, Q1

純安

!!!

4/25, 26 20:00 下次討論



Appraise

評讀

問題
Ask

檢索
Acquire

評讀
Appraise

應用
Apply

我們的評讀流程



Fecal microbiota transplantation for the treatment of recurrent *Clostridioides difficile* (Clostridium difficile) (Review)

Minkoff NZ, Aslam S, Medina M, Tanner-Smith EE, Zackular JP, Acra S, Nicholson MR, Imdad A

CNSP
Critical Appraisal
Skills Programme

Evidence Tables for Evidence Reviewers (ELL) Levels of Evidence				
Question	Study 1	Study 2	Study 3	Study 4
1. What is the effect of the intervention on the outcome?	Study 1: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 2: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 3: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 4: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).
2. What is the effect of the intervention on the outcome?	Study 1: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 2: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 3: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 4: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).
3. What is the effect of the intervention on the outcome?	Study 1: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 2: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 3: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 4: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).
4. What is the effect of the intervention on the outcome?	Study 1: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 2: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 3: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).	Study 4: 100 patients, 50 in each group. The intervention group had a significantly higher rate of response (80%) compared to the control group (60%).

評估證據等級

GRADEprofiler
Version: 3.2.2

評估證據品質

Systematic
review



「證據
可信度」



「結果
重要性」



「應用」

1. 是否問了一個清楚、明確的問題？

☑ YES

Objectives

使用糞便菌叢移植法治療

反覆的困難桿菌感染

To evaluate the **benefits and harms** of **donor-based fecal microbiota transplantation** for the treatment of **recurrent *Clostridioides difficile*** infection in immunocompetent people.



有效性及安全性

我們的個案是初次感染？

針對初次感染尚無證據力足夠之文獻

Selection criteria

We considered randomized trials of adults or children with rCDI for inclusion. Eligible interventions must have met the definition of FMT, which is the administration of fecal material containing distal gut microbiota from a healthy donor to the gastrointestinal tract of a person with rCDI. The **comparison group included participants who did not receive FMT and were given placebo, autologous FMT, no intervention, or antibiotics with activity against *C difficile*.**



對照組：安慰劑、自體糞便菌叢移植、不做介入、給抗生素



「證據
可信度」

2.是否尋找適當研究型態的文獻?



Criteria for considering studies for this review

Types of studies

We included **RCTs assessing FMT for the treatment of rCDI**. We included trials with multiple arms, as long as these included an intervention and comparison group that addressed the primary question for this review. We planned to include both cross-over and cluster-randomized trials; however, there were none that met criteria for inclusion. We **excluded observational studies, case reports, and case series.**

共收納六篇，皆為RCT，
排除觀察性研究、病例報告等類型的文獻

Included studies

Six RCTs assessed FMT for the treatment of rCDI (Cammarota 2015; Hota 2017; Hvas 2019; Kelly 2016; Rode 2021; van Nood 2013). See Characteristics of included studies table for full details.

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1 (Level 1*)	Step 2 (Level 2*)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review that allow matching circumstances*
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
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or <i>n</i> -of-1 trials	Randomized trial or observational study with dramatic effect
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, <i>n</i> -of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) study with dramatic effect
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or <i>n</i> -of-1 trial	Randomized trial or (exceptionally) study with dramatic effect
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial



「證據
可信度」

3.所有重要且相關的研究都被納入?

 YES

足夠的資料庫

Electronic searches

We searched the following databases from their inception using the methods in the *Cochrane Handbook for Systematic Reviews of Interventions* (Lefebvre 2022):

1. Cochrane Central Register of Controlled Trials (CENTRAL, via Ovid; Issue 3, 2022) (Appendix 2);
2. MEDLINE (1946 via Ovid) (Appendix 3);
3. Embase (1974 via Ovid) (Appendix 4);
4. Conference Proceedings Citation Index (Appendix 5);
5. ISRTN Registry (www.isrctn.com/; Appendix 5).

The literature was conducted on 16 February 2021, and updated on 31 March 2022. We searched the Cochrane Gut Group Specialized Register in February 2021 only and not in March 2022.

Searching other resources

We searched ClinicalTrials.gov (www.clinicaltrials.gov/) for ongoing trials. We also searched the reference sections of previously published randomized trials and meta-analyses on this topic. We contacted authors of published and ongoing studies to seek new or additional data when needed. Of note, ICTRP and ClinicalTrials.gov are both indexed in CENTRAL.

有和各作者聯繫，也有搜尋未發表的文獻
未收錄非英文文獻



「證據
可信度」

4. 是否評估所納入研究文獻的品質?

☑ YES

At least two review authors (SHA and MM) answered the signaling questions in the RoB 2 tool for each domain to assess the risk of bias separately for all included studies, for all outcomes reported in the summary of findings table, and the authors compared their assessments. The overall risk of bias was determined based on

使用ROB 2.0評估，收錄六篇文獻皆為中上品質
且有兩位以上作者參與評估

Study	Bias					Overall
	Randomisation process	Deviations from intended interventions	Missing outcome data	Measurement of the outcome	Selection of the reported results	
Cammarota 2015	✓	✓	✓	✓	✓	✓
Hota 2017	~	✓	✓	✓	✓	✓
Hvas 2019	~	✓	✓	✓	✓	✓
Kelly 2016	✓	✓	✓	✓	✓	✓
Rode 2021	✓	✓	✓	✓	✓	✓
van Nood 2013	✓	✓	✓	✓	✓	✓



「證據
可信度」

Legend: ✓ Low risk of bias ✗ High risk of bias ~ Some concerns

5. 作者將研究結果進行合併是否合理？

☒ Can't tell

有評估異質性

也有針對 $I^2 > 60\%$ 的部分進行次族群分析

Assessment of heterogeneity

We assessed the clinical, methodologic, and statistical heterogeneity amongst studies. We assessed methodologic heterogeneity by comparing components of the risk of bias assessment. We assessed statistical heterogeneity based on forest plots, the I^2 statistic, and the P value for the Chi² test. We considered heterogeneity to be significant if the P value for Chi² was less than 0.10 or the I^2 statistic was greater than 60%. We planned to explore potential explanations for heterogeneity using subgroup analyses to explore the distribution of important factors such as maximum number of doses of FMT, route of administration, and the source of FMT, but the number of studies was too small to complete the planned subgroup analyses.

Sensitivity analysis

We planned the following a priori sensitivity analyses.

1. Fixed-effect model versus random-effects model.
2. Studies with high risk of bias versus those with low risk of bias/ some concerns.

None of the included studies were at high risk of bias so the second of these planned sensitivity analyses was not conducted.

作者有設計敏感性分析，
但收錄的文獻並沒有需要進行分析的
high risk of bias文章，故沒有進行敏感性分析

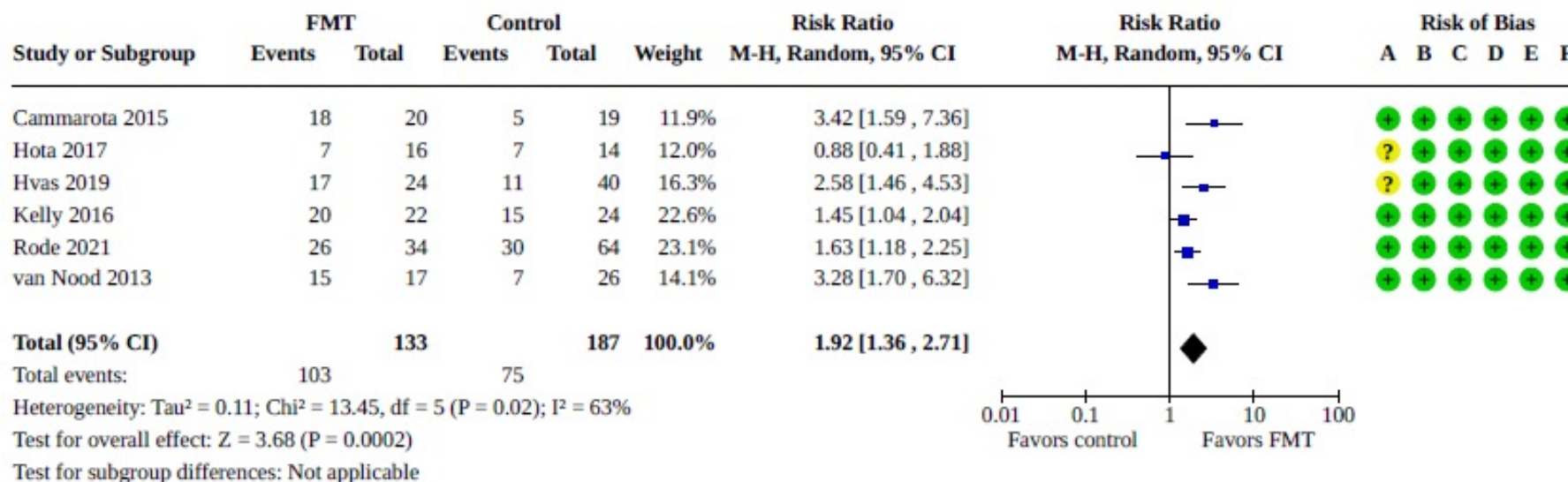


「證據
可信度」

5. 作者將研究結果進行合併是否合理？

✓ Can't tell

Figure 2. Forest plot of comparison: 1 Fecal microbiota transplantation (FMT) vs control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), outcome: 1.1 Resolution of rCDI.

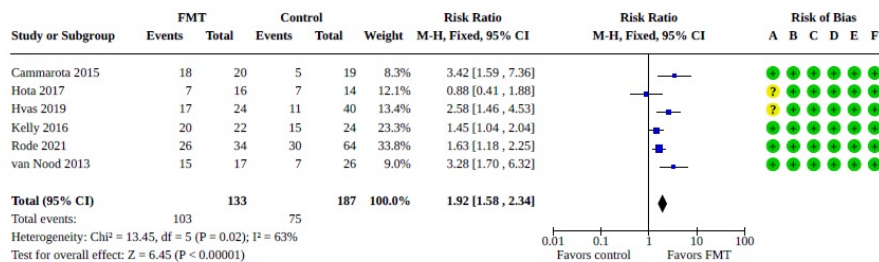


有效性outcome : $I^2 = 63\%$, 異質性較高 -> 進行次組群分析

5. 作者將研究結果進行合併是否合理?

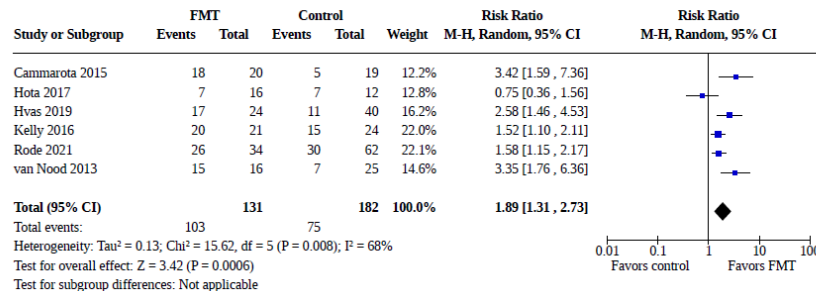
✓ Can't tell

Analysis 1.2. Comparison 1: Fecal microbiota transplantation (FMT) versus control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), Outcome 2: Resolution of rCDI: sensitivity analysis: fixed-effect model



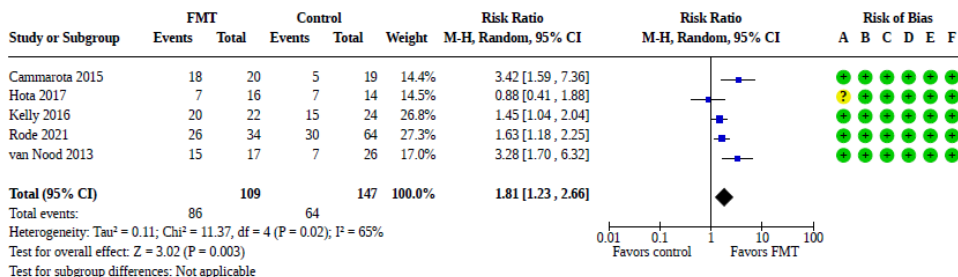
$I^2 = 63\%$

Analysis 1.3. Comparison 1: Fecal microbiota transplantation (FMT) versus control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), Outcome 3: Resolution of rCDI: sensitivity analysis: as-available analysis



$I^2 = 68\%$

Analysis 1.4. Comparison 1: Fecal microbiota transplantation (FMT) versus control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), Outcome 4: Resolution of rCDI: sensitivity analysis: excluding immunocompromised participants



$I^2 = 65\%$

進行次組群分析， I^2 仍高



「證據
可信度」

5. 作者將研究結果進行合併是否合理？

✓ Can't tell

Figure 3. Forest plot of comparison: 1 Fecal microbiota transplantation (FMT) vs control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), outcome: 1.2 Serious adverse events.



不良事件outcome : $I^2 = 26\%$

但有效性outcome進行次組群分析後 I^2 仍高，故無法評斷研究結果若進行合併是否合理



「證據
可信度」

評讀統整



「證據
可信度」

是否問了一個清楚、明確的問題？

☒ YES

是否尋找適當研究型態的文獻？

☒ YES

所有重要且相關的研究都被納入？

☒ YES

是否評估所納入研究文獻的品質？

☒ YES

作者將研究結果進行合併是否合理？

☒ Can't tell

-> 值得評讀



「結果
重要性」

6. 整體結果為何？

☑ YES

使用FMT比起對照組，有較佳的有效性及較高的安全性
且證據品質中等以上

Key results

Stool transplantation probably leads to a larger increase in resolution of repeated infections of *C difficile* than the other treatments studied. Other treatments included antibiotics such as vancomycin, which are commonly prescribed for this infection. These same studies looked at the rate of serious side effects and risk of death from FMT. Fecal microbiota transplantation likely leads to a small decrease in serious side effects; however, these effects were few. Fecal microbiota transplantation may decrease the risk of death in people with rCDI; however, there were few deaths in either group. Elimination of one study that included some immunocompromised people did not alter these conclusions, but, based on the low number of immunocompromised people enrolled in the included studies, conclusions could not be drawn about the benefits or harms of FMT for rCDI in the immunocompromised population at this time.

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with control	Risk with fecal microbiota transplantation (FMT)				
Resolution of rCDI follow-up: range 8 weeks to 17 weeks	401 per 1000	770 per 1000 (545 to 1000)	RR 1.92 (1.36 to 2.71)	320 (6 RCTs)	⊕⊕⊕⊕ Moderate ^{a,b,c}	FMT likely results in a large increase in resolution of rCDI.
Serious adverse events follow-up: range 8 weeks to 17 weeks	225 per 1000	164 per 1000 (85 to 317)	RR 0.73 (0.38 to 1.41)	320 (6 RCTs)	⊕⊕⊕⊕ Moderate ^d	FMT probably results in a slight reduction in serious adverse events; however, the CIs around the summary estimate were wide and included a possibility of increased risk of serious adverse events.
All-cause mortality follow-up: range 8 weeks to 17 weeks	96 per 1000	55 per 1000 (21 to 140)	RR 0.57 (0.22 to 1.45)	320 (6 RCTs)	⊕⊕⊕⊕ Low ^e	FMT may result in a reduction in all-cause mortality; however, the CIs around the summary estimate were wide and possible risk of increased mortality could not be ruled out.
Colectomy	0 per 1000	0 per 1000 (0 to 0)	Not estimable	(0 studies)	-	None of the included studies reported this outcome.



「結果
重要性」

6. 整體結果為何？

Cammarota 2015

Primary outcome

1. Resolution of diarrhea associated with *C difficile* infection (disappearance of diarrhea, or persistent diarrhea explicable by other causes, with 2 negative stool tests for *C difficile* toxin) 10 weeks after end of treatments. For participants in FMT group who required > 1 infusion of feces, follow-up was extended to 10 weeks after the last infusion.

Secondary outcome

1. Toxin negative without recurrent *C difficile* infection (diarrhea unexplainable by other causes, with or without positive stool toxin) 5 weeks and 10 weeks after end of treatments.

Hota 2017

Primary outcome

1. Recurrence of symptomatic, laboratory-confirmed CDI within 120 days of the intervention

Secondary outcomes

1. Recurrence of CDI symptoms within 14 and 120 days (not laboratory-confirmed)
2. Recurrence of CDI within 120 days of crossover
3. Days of diarrhea in the 120 days of follow-up
4. CDI requiring hospital admission

Hvas 2019

Primary outcome

1. Combined clinical resolution and a negative *C difficile* test result without the need for rescue FMT or colectomy 8 weeks after the initial treatment.

Secondary outcome

1. Clinical resolution at week 8, a negative CD test result at week 8, combined clinical resolution and negative CD test result at week 1, clinical resolution at week 1, and a negative CD test result at week 1

Safety outcomes

1. AEs
2. SAEs
3. Immediate complications in 24 hours

Kelly 2016

Primary outcome

1. Clinical cure 8 weeks after FMT or at the time of early withdrawal. Clinical cure defined as resolution of diarrhea (i.e. < 3 unformed stools for 2 consecutive days), with maintenance of resolution for 8-week follow-up period and no further requirements for anti-infective therapy for *C difficile* infection regardless of results of follow-up stool testing for *C difficile*

Secondary outcome

1. Clinical failure during the 8-week period after FMT. Clinical failure defined as the persistence or development of diarrhea and the need for additional anti-infective therapy for CDI with or without positive stool testing (PCR) for *C difficile*

Safety endpoints

1. SAEs
2. AEs
3. Death
4. New medical conditions or diagnoses, or changes in medical conditions at 6-month follow-up

Rode 2021

Primary outcome

1. Clinical cure within 90 days after ended treatment. Clinical cure defined as absence of *C difficile* infection (i.e. absence of diarrhea or diarrhea with a negative *C difficile* test)

Secondary outcome

1. Clinical cure within 180 days after ended treatment

Safety outcomes

1. AEs
2. SAEs
3. 180-day mortality (all-cause and possibly *C difficile*-related mortality)

van Nood 2013

Primary outcome

1. Cure without relapse within 10 weeks after initiation of therapy. If a patient required a second infusion of donor feces, follow-up was extended to 10 weeks after the second infusion for primary outcome assessment. Cure defined as absence of diarrhea or persistent diarrhea that could be explained by other causes with 3 consecutive negative stool tests for *C difficile* toxin

Secondary outcome

1. Cure without relapse after 5 weeks. Relapse defined as diarrhea with a positive stool test for *C difficile* toxin



「結果
重要性」

6. 整體結果為何？

有效性

1. 治療後1、2、5、8、10週、90天、120天等等時間點是否有復發情形，評估項目包含不再有腹瀉症狀、C difficile toxin test 陰性等等
2. 部分研究C difficile toxin test需連續三次陰性才可認定為cure或有效

安全性

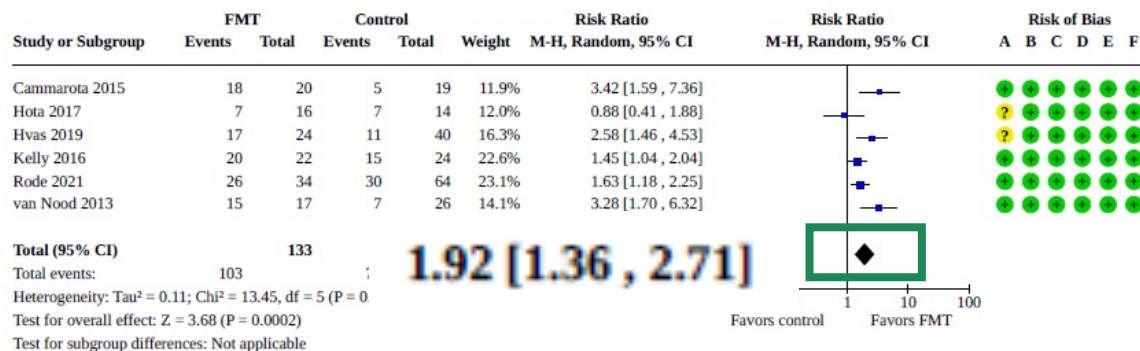
1. 治療後各時間點內若有復發，腹瀉復發天數、是否需住院治療等等
2. 治療過程中不良事件
3. 治療過程中嚴重不良事件
4. 治療後24小時內立即產生之併發症
5. 180天內死亡事件



「結果
重要性」

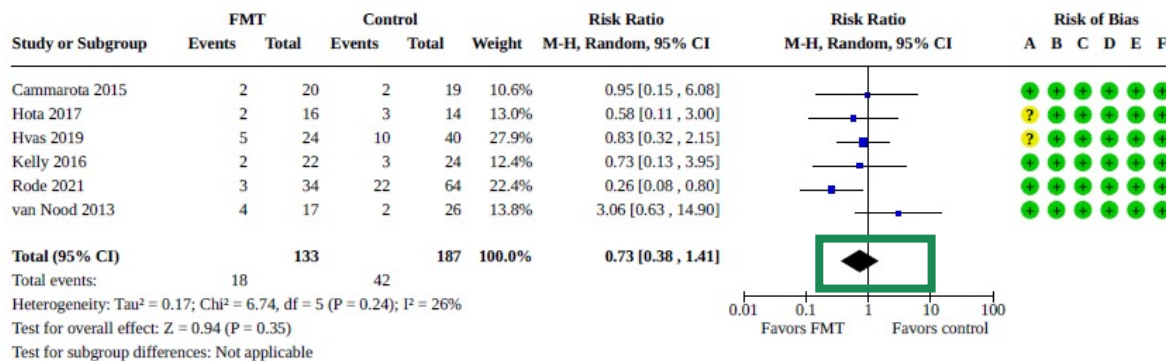
6. 整體結果為何？

Figure 2. Forest plot of comparison: 1 Fecal microbiota transplantation (FMT) vs control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), outcome: 1.1 Resolution of rCDI.



有效性：FMT優於對照組
RR 1.92，經計算後NNT=3
且95%信賴區間不包含1

Figure 3. Forest plot of comparison: 1 Fecal microbiota transplantation (FMT) vs control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), outcome: 1.2 Serious adverse events.



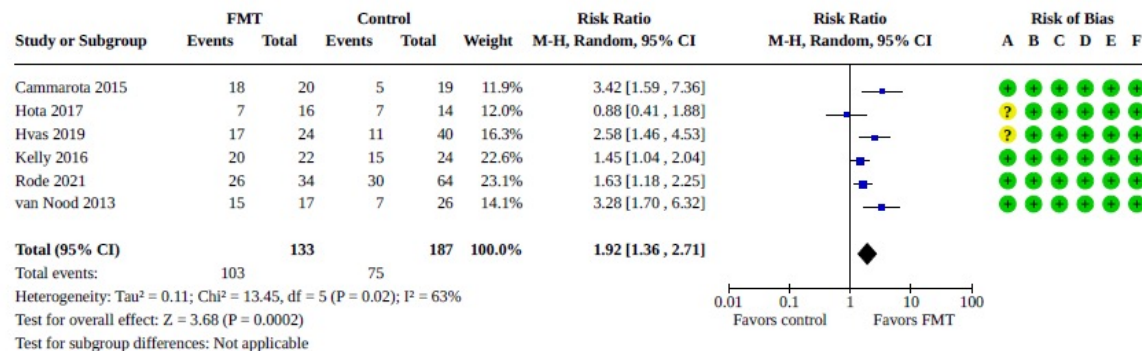
安全性：FMT在各項嚴重副作用並沒有多於對照組



「結果
重要性」

6. 整體結果為何？

Figure 2. Forest plot of comparison: 1 Fecal microbiota transplantation (FMT) vs control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), outcome: 1.1 Resolution of rCDI.



Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1.1 Resolution of rCDI: intention-to-treat analysis	6	320	Risk Ratio (M-H, Random, 95% CI)	1.92 [1.36, 2.71]
1.2 Resolution of rCDI: sensitivity analysis: fixed-effect model	6	320	Risk Ratio (M-H, Fixed, 95% CI)	1.92 [1.58, 2.34]
1.3 Resolution of rCDI: sensitivity analysis: as-available analysis	6	313	Risk Ratio (M-H, Random, 95% CI)	1.89 [1.31, 2.73]
1.4 Resolution of rCDI: sensitivity analysis: excluding immunocompromised participants	5	256	Risk Ratio (M-H, Random, 95% CI)	1.81 [1.23, 2.66]

FMT有效性優於對照組，
且在所有次族群分析的
outcome中，RR的95%
信賴區間裡皆沒有包含1，
有顯著的差異。



「結果
重要性」

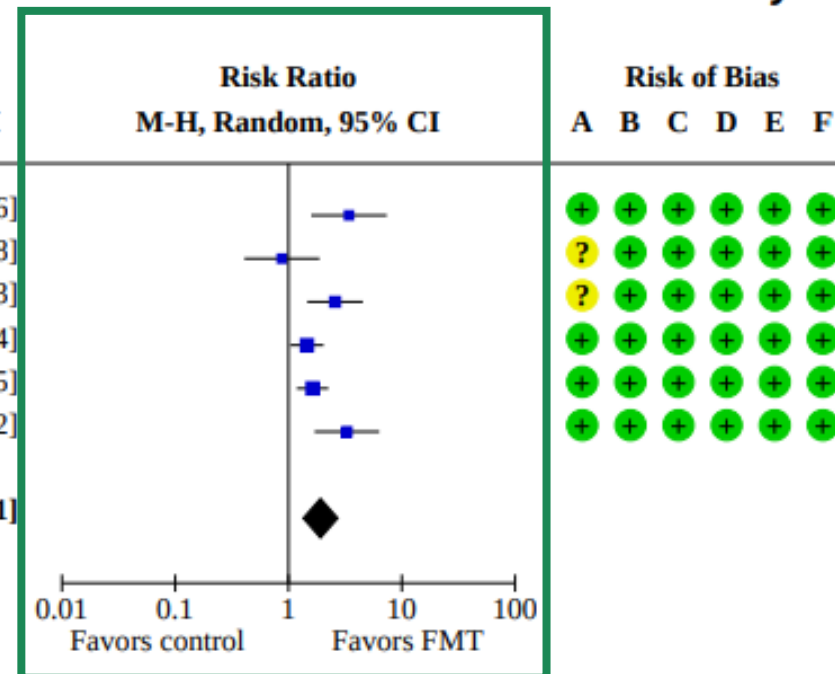
7. 結果精準嗎? ☒ YES

Analysis 1.1. Comparison 1: Fecal microbiota transplantation (FMT) versus control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), Outcome 1: Resolution of rCDI: intention-to-treat analysis

Study or Subgroup	FMT		Control		Weight	Risk Ratio M-H, Random, 95% CI
	Events	Total	Events	Total		
Cammarota 2015	18	20	5	19	11.9%	3.42 [1.59 , 7.36]
Hota 2017	7	16	7	14	12.0%	0.88 [0.41 , 1.88]
Hvas 2019	17	24	11	40	16.3%	2.58 [1.46 , 4.53]
Kelly 2016	20	22	15	24	22.6%	1.45 [1.04 , 2.04]
Rode 2021	26	34	30	64	23.1%	1.63 [1.18 , 2.25]
van Nood 2013	15	17	7	26	14.1%	3.28 [1.70 , 6.32]

Total (95% CI) 133 187 100.0% 1.92 [1.36 , 2.71]

Total events: 103 75
Heterogeneity: $\tau^2 = 0.11$; $\chi^2 = 13.45$, $df = 5$ ($P = 0.02$); $I^2 = 63\%$
Test for overall effect: $Z = 3.68$ ($P = 0.0002$)
Test for subgroup differences: Not applicable



Total 95% CI 1.36~2.71

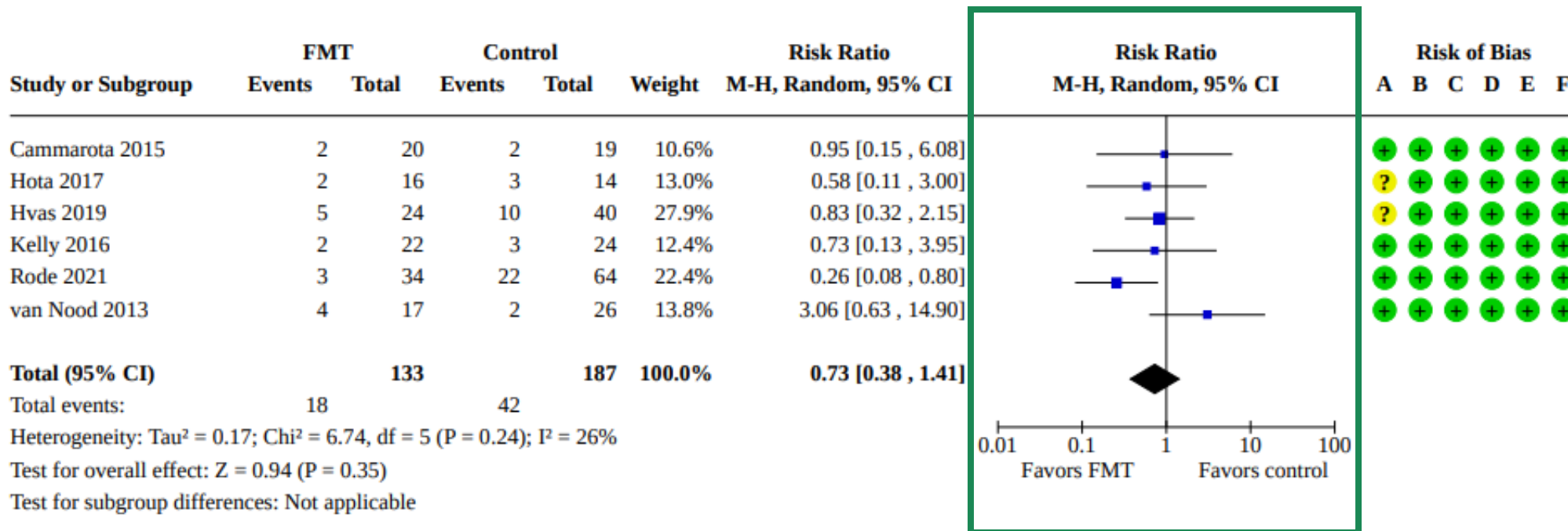


「結果
重要性」

信賴區間是窄的→精準

7. 結果精準嗎? ☑ YES

Figure 3. Forest plot of comparison: 1 Fecal microbiota transplantation (FMT) vs control for the treatment of recurrent *Clostridioides difficile* infections (rCDI), outcome: 1.2 Serious adverse events.



Total 95% CI 0.38~1.41



「結果
重要性」

信賴區間是窄的→精準

評估證據等級

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 <i>n</i> -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, or <i>n</i> -of-1 trial with the patient raising the question about observational study with dramatic effect	Individual randomized trial	Non-randomized controlled cohort/follow-up study**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or <i>n</i> -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

研究設計為最佳 → 維持Level 1



「結果
重要性」

使用 GRADEprofiler 評估證據品質

Version: 3.2.2

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)
	Risk with control	Risk with fecal microbiota transplantation (FMT)		
Resolution of rCDI follow-up: range 8 weeks to 17 weeks	401 per 1000	770 per 1000 (545 to 1000)	RR 1.92 (1.36 to 2.71)	320 (6 RCTs)
Serious adverse events follow-up: range 8 weeks to 17 weeks	225 per 1000	164 per 1000 (85 to 317)	RR 0.73 (0.38 to 1.41)	320 (6 RCTs)

Certainty of the evidence (GRADE)

⊕⊕⊕⊖

Moderate^{a,b,c}

⊕⊕⊕⊖

Moderate^d



「結果
重要性」

問題
Ask

評讀統整



「證據
可信度」



「結果
重要性」



「應用」

檢索
Acquire

評讀
Appraise

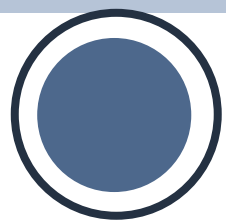
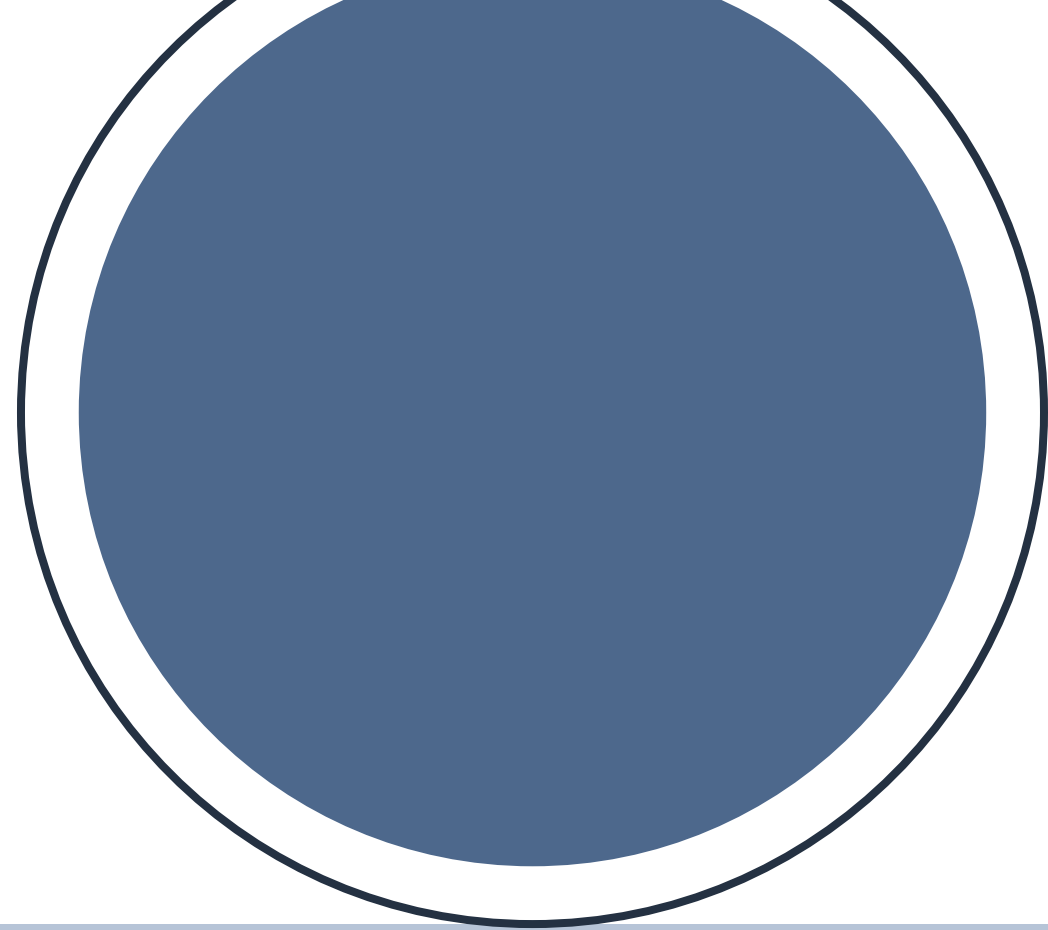
應用
Apply

是否問了一個清楚、明確的問題？		☒ YES
是否尋找適當研究型態的文獻？		☒ YES
所有重要且相關的研究都被納入？		☒ YES
是否評估所納入研究文獻的品質？		☒ YES
作者將研究結果進行合併是否合理？		☒ Can't tell
整體結果為何？	療效：FMT顯著優於對照組；嚴重副作用無顯著差異	
結果精準嗎？	☒ YES	

等級1，品質中

值得評讀

Apply



應用

8. 是否可應用到當地的族群？

☒ NO

Country

The included studies were conducted in five different countries, with two studies conducted in Denmark (Hvas 2019; Rode 2021), and one each in Canada (Hota 2017), the Netherlands (van Nood 2013), Italy (Cammaraota 2015), and the US (Kelly 2016).

未收入亞洲文獻



8. 是否可應用到當地的族群？

☒ NO

Article | [Open Access](#) | [Published: 29 January 2021](#)

Ethnicity influences the gut microbiota of individuals sharing a geographical location: a cross-sectional study from a middle-income country

[Jacky Dwiyanto](#) ✉, [M. H. Hussain](#), [D. Reidpath](#), [K. S. Ong](#), [A. Qasim](#), [S. W. H. Lee](#), [S. M. Lee](#), [S. C. Foo](#), [C. W. Chong](#) & [Sadequr Rahman](#) ✉

[Scientific Reports](#) **11**, Article number: 2618 (2021) | [Cite this article](#)

不同的飲食習慣會導致
不同的腸道菌叢

而不同的種族會有不同的
飲食及生活習慣

In conclusion, the influence of ethnicity on the gut microbiota was detected from a community living in the same geographical region. This influence could be traced to the collective effect of multiple lifestyle factors exerting subtle yet distinct differences across ethnicity. Ethnicity, therefore, serves as a proxy for lifestyle and dietary variations across different ethnic groups living in the same community. Future studies on the GM should consider the impact of ethnicity to ensure valid interpretation of their study outcome.



「應用」

Dwiyanto, J., Hussain, M.H., Reidpath, D. et al. Ethnicity influences the gut microbiota of individuals sharing a geographical location: a cross-sectional study from a middle-income country. *Sci Rep* 11, 2618 (2021). <https://doi.org/10.1038/s41598-021-82311-3>

8. 是否可應用到當地的族群以及本案例？

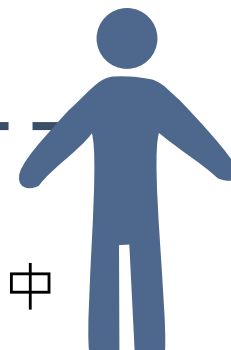


Fecal microbiota transplantation for the treatment of recurrent *Clostridioides difficile* (*Clostridium difficile*) (Review)

Minkoff NZ, Aslam S, Medina M, Tanner-Smith EE, Zackular JP, Acra S, Nicholson MR, Imdad A

江先生

健康狀況：65/M，曾中風，反覆泌尿道感染
抗生素治療後感染性腹瀉



收錄的各篇平均52~73歲	年齡	65歲
男女比例相近	性別	男性
未知	共病	中風病史
未知	經濟狀況	未知
歐洲及美洲	種族	亞洲人



「應用」

9. 是否所有重要臨床結果都有被考量？

☒ YES

Types of outcome measures

Primary outcomes

1. Proportion of participants with a resolution of rCDI: we considered a participant fulfilling the definition of resolution of rCDI if studies reported either of the two criteria: diarrheal symptoms did not recur after treatment or repeat *C difficile* testing was negative.
2. Serious adverse events, as per the author's definition of a serious adverse event.

Secondary outcomes

A priori planned secondary outcomes:

1. Treatment failure: symptoms of CDI did not resolve after FMT treatment or that reoccurred within two weeks post-FMT.
2. All-cause mortality.

3. Proportion of participants who withdrew from the study.
4. Rate of new CDI infection after a successful FMT, with renewal of diarrheal symptoms and a repeat positive test for *C difficile* more than eight weeks after the previous positive test (McDonald 2007; McDonald 2018).
5. Any adverse event.
6. Quality of life score.
7. Colectomy.

We considered the primary and secondary outcomes at the longest follow-up before the trial was open for analysis. We anticipated that trials would have a follow-up period of at least six weeks. Additional details on definitions of certain primary and secondary outcomes discussed in protocol are available in [Appendix 1](#).



「應用」

長期的預後及副作用沒被考慮→需要更多研究來探討

10. 付出的傷害和花費換得的益處是否值得？

☑ YES



NNT=3



糞便菌叢移植法

抗生素或是安慰劑



利弊平衡	效果	顯著優於對照組	
	副作用	無顯著差異	
費用資源	金錢	需自費	健保給付
	時間	只需治療一次！	一天需口服四次，7-14天
醫療現況	可近性	有做糞便菌叢移植法的醫院相對較少	台灣的醫學中心皆有對應的抗生素
病人期望	最在意的問題	能改善感染性腹瀉，且副作用低	

評讀統整



「證據
可信度」



「結果
重要性」



「應用」

是否問了一個清楚、明確的問題？		☒ YES
是否尋找適當研究型態的文獻？		☒ YES
所有重要且相關的研究都被納入？		☒ YES
是否評估所納入研究文獻的品質？		☒ YES
作者將研究結果進行合併是否合理？		☒ Can't tell
整體結果為何？	療效：FMT顯著優於對照組；嚴重副作用無顯著差異	
結果精準嗎？	等級1，品質中	☒ YES
可否應用到當地族群？		☒ NO
所有重要結果都考量到？		☒ YES
益處是否大於傷害？		☒ YES

共享決策

超級比一比

YES NNT=3		I	糞便菌叢移植法	抗生素或是安慰劑	C
利弊平衡	效果		顯著優於對照組		
	副作用		無顯著差異		
	費用	金錢	需自費	健保給付	
	資源	時間	只需治療一次！	一天需口服四次，7-14天	
	醫療現況	可近性	有做糞便菌叢移植法的醫院相對較少	台灣的醫學中心皆有對應的抗生素	
病人期望	最在意的問題		能改善感染性腹瀉，且副作用低		

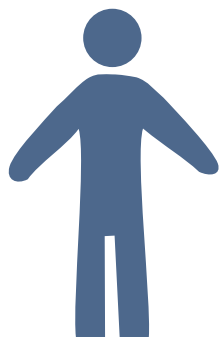
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63

您在意的因素有哪些？重要度為何？

	不在意				很在意
症狀緩解	1	2	3	4	5
副作用	1	2	3	4	5
經濟考量	1	2	3	4	5
方便性	1	2	3	4	5
生活品質	1	2	3	4	5

問題
Ask



糞便菌叢移植法的治療效果如何？
副作用如何？有哪些注意事項呢？

65/M, 中風病史
首次感染性腹瀉

江先生您好，根據我們團隊實證查證的結果，
糞便移植法的確有良好的治療效果喔！



陳圓中



謝錦記

一篇證據品質良好的歐美文獻證實，反覆困難梭菌感染的病患，使用傳統治療跟糞便移植法比較時，糞便移植的治療效果比較好！而副作用跟傳統抗生素治療比沒有比較高！長期的效果仍有待觀察，但目前整體看起來，效果跟安全性都是不錯的喔！

不過，江先生您目前懷疑是初次困難梭菌感染，我們建議您先以傳統抗生素治療，若有強烈副作用或無法配合服藥，我們才建議嘗試糞便移植法。而且目前糞便移植為自費項目，費用比較高，您可以再評估一下喔！



陳圓中



林鈺安



陳圓中

謝 謝 您 的 聆 聽 ！

檢索
Acquire

評讀
Appraise

應用
Apply