高雄醫學大學附設中和紀念醫院
Kaohsiung Medical University Chung-Ho Memorial Hospital

實證護理發表會

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問題的背景

- 某病人因colon cancer接受hemicolectomy手術，術後第二天，鼻胃管引流量約50ml，無腹脹、噁心情形，但尚未排氣，病人主訴喉嚨疼痛不適，覺得鼻胃管留著很痛苦，要求移除鼻胃管。醫護人員給予安撫並告知常規放置鼻胃管減壓之目的(預防嘔吐、腹脹、吸入性肺炎)，但病人認為鼻胃管留置造成極度不舒服，強調會自己拔管，病人女兒詢問“已經開完刀了真的不能早點拔掉鼻胃管嗎”？
- 非必要之醫護措施：增加護理時數/增加管路自拔病安異常事件

PICO

Patient/Problem	結、直腸手術後病人
Intervention	術後回到病房即移除鼻胃管
Comparison	術後排氣後再移除鼻胃管
Outcome	腸道功能恢復、合併症發生率

- 臨床問題
  - “接受結、直腸手術病人，術後回到病房即移除鼻胃管與術後排氣後再移除鼻胃管相較之下，其腸道功能恢復及合併症發生率是否有所差異？”

關鍵字

P	Mesh term	Colon surgery,Rectal surgery, Colorectal Surgery, Colon and Rectal Surgery
	Natural term	Rectum surgery, 結直腸手術，結腸手術，直腸手術
I	Mesh term	
	Natural term	Tube free,without nasogastric decompression
C	Mesh term	Nasogastric Intubation, Flatus
	Natural term	nasogastric tube, nasogastric Decompression, 鼻胃管,胃減壓,排氣
O	Mesh term	Complications
	Natural term	bowel movement,bowel function 腸蠕動，合併症

- “P” and “I” and “C” and “O” / “Mesh term” or “Natural term”

資料庫

資料庫	搜尋結果	選讀篇數
The Cochrane library	3	0
Medline	42	4
ACP Journal Club	2	0
Nursing reference center	18	0
CEPS及全國碩博士論文	0	0
考科藍實證醫學資料庫	0	0

- 篇名/摘要/年代
- 排除：兒童/疾病/重覆

搜尋資料過程-Cochrane library

THE COCHRANE LIBRARY
Independent high-quality evidence for health care decision making
from The Cochrane Collaboration

Current Search History

ID	Search	Hits	Edit	Delete
#1	(Colon surgery):ti,ab,kw or (Rectal surgery):ti,ab,kw or (Colorectal Surgery):ti,ab,kw or (Rectum surgery):ti,ab,kw	3554	edit	delete
#2	(Nasogastric Intubation):kw or (nasogastric tube):kw or (nasogastric Decompression):kw	43	edit	delete
#3	(#1 AND #2)	3	edit	delete

Search Results

Show Results in:
Cochrane Reviews [0] | Other Reviews [0] | **Trials [3]** | Methods Studies [0] | Technology Assessments [0] | Economic Evaluations [0] | Cochrane Groups [0]

There are **3** results out of **670154 records** for: "(**#1** AND **#2**) in **Cochrane Central Register of Controlled Trials**"

View: **1-3**

Export All Results

Record Information Sort by: Record Title | Match % | **Date**

☐ **Laparoscopic sigmoid resection for diverticulitis decreases major morbidity rates: a randomized controlled trial**
Klarenbeek BR, Van Der Peet DL, Cuesta MA
2009

☐ **Laparoscopic sigmoid resection for diverticulitis decreases major morbidity rates: a randomized controlled trial**
Teeuwen PHE, Schouten MGJ, Bremers AJA, Bleichrodt RP
2009

☐ **When is postoperative nasogastric suction useful? Randomised prospective study on hundred cases of biliary or colo-rectal surgery.**
Sandrucci S, Frileux P, Tiret E, Bahnini A, Hannoun L, Nordlinger B, Parc R
1987

Select All (to export citations)

Export Selected Citations | Export All Results

View: **1-3**

搜尋資料過程-Medline

Search	Add to builder	Query	Items found	Time
#15	Add	Search **(#13) AND #14**	42	04:33:15
#14	Add	Search **((Nasogastric Intubations[Title/Abstract]) OR nasogastric tube [Title/Abstract]) OR nasogastric Decompression[Title/Abstract]**	2921	04:32:58
#13	Add	Search **(((Colon surgery[Title/Abstract]) OR Rectum surgery[Title/Abstract]) OR Rectal surgery[Title/Abstract]) OR Colorectal Surgery[Title/Abstract]**	3859	04:31:51

評讀等級的依據

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

*** Level may be graded down on the basis of study quality, imprecision, indirectness (study PICO does not match questions PICO), because of inconsistency between studies, or because the absolute effect size is very small; Level may be graded up if there is a large or very large effect size.**

選讀文獻證據等級

文獻	篇名	第一作者	證據等級
文獻一	Bench to bedside review: Routine postoperative use of the nasogastric tube utility or futility?	Tanguy, M.(2007)	V
文獻二	The role of nasogastric tube in decompression after elective colon and rectum surgery:a meta-analysis	Rao, W. (2011)	I
文獻三	Early oral feeding after colorectal resection:a Randomized controlled study	Feo, C. V. (2004)	II
文獻四	Early removing gastrointestinal decompression and early oral feeding improve patients‘ rehabilitation after colorectostomy	Zhou, T. (2006)	II

文獻一

"Bench to bedside review: Routine postoperative use of the nasogastric tube utility or futility?"

- 證據等級：V
- 第一作者：Michèle Tanguy, 2007
- 文獻回顧：手術後常規鼻胃管留置以減少腸胃不適是否有效益？
- 並未依主題系統性的回顧、未描述文獻搜尋範圍、綜論而未評讀(SUMMARY OF CURRENT INFORMATION)

(Tanguy, Seguin, &Mallèdant, 2007)

文獻一精要內容1

- 手術後鼻胃管引流理由

1. 吻合處裂開
   - 腹部臟器手術後最令人害怕的合併症
   - 發生率3%~12%
   - 結直腸手術後發生吻合處裂開之死亡率30%
2. 切口疝氣(***incisional hernia***)
   - 危險因子：縫合處的張力太高

- 手術後鼻胃管引流並不能確保吻合處不會裂開

(Tanguy, Seguin, &Mallèdant, 2007)

文獻一精要內容2

- 反對術後鼻胃管減壓聲浪
  - 1960年代起：可能增加腸阻塞發生率
  - 腹部手術後常規鼻胃管引流
    - 不會加速排氣
    - 較多肺部合併症
    - 引發鼻炎、咽喉炎令病人痛苦
  - 省略鼻胃管減壓
    - 在術後並不會增加吻合處裂開及傷口裂開發生率
    - 早期進食可減少吻合處裂開及傷口感染

(Tanguy, Seguin, &Mallèdant, 2007)

文獻二

"The role of nasogastric tube in decompression after elective colon and rectum surgery : a meta-analysis"

- 統合分析文獻評讀
  - Is the study valid?
  - What are the results?
  - Will the results help locally?

(Rao, et al., 2011)

文獻二精要內容1

- 等級：Level Ⅰ
- 第一作者/年代：Wensheng Rao,2011
- 研究目的
  - 比較結/直腸手術術後鼻胃管引流至排氣後拔除與術後立即拔除鼻胃管(5篇離開恢復室前拔，2篇手術前後都未放置)二組病人在噁心、嘔吐、鼻胃管重置、合併症、咽喉炎、腸阻塞、呼吸道感染、傷口感染等情形是否有顯著差異。

(Rao, et al., 2011)

文獻二精要內容2

- 結果-鼻胃管引流至排氣後拔除之病人
  - 較少發生嘔吐情形(p<0.00001;RR=2.85; 95% CI [2.12, 3.83])
  - 較少發生鼻胃管重置(p<0.00001; RR=3.90; 95% CI [2.34, 6.52])
  - 咽喉炎發生率較高(p<0.00001 RR=0.14; 95%CI [0.08, 0.26])
  - 呼吸道感染發生率較高(p=0.004;RR=0.37; 95% CI [0.19, 0.74])
  - 噁心、傷口感染及腸阻塞情形則沒有顯著差異

(Rao, et al., 2011)

文獻二評讀1

- 清楚聚焦的臨床問題
  - YES
  - “The role of **nasogastric tube** in decompression after elective **colon and rectum surgery** : a meta-analysis”
- 搜尋所有相關的研究
  - EMBASE, MEDLINE, BIOSIS,CNKI, and COCRANE LIBRARY until September
  - journals including Dis Colon Rectum, Br Med J, Am J Surg, Ann Surg, Int J Colorect Dis, Chin J Surg, and Chin J Gastrointest Surg
  - published studies from **January 1960 to September 2009**
  - Key words used in electronic searching included “nasogastric,” “nasogastric decompression,” “nasogastric intubation” with “colon” and **“randomized”** or with “rectum” and “randomized.”

(Rao, et al., 2011)

文獻二評讀2 (Rao, et al., 2011)

- 收納適當的研究
  - 選讀7篇
- 納入/排除條件
  - Inclusion criteria are (1) trials of case control or cohort research or nasogastric decompression after elective colon and rectum surgery, (2) randomized groups in these trials, (3) groups treated with non-NGT and control groups with NGT, and (4) trials giving definite criteria of non-NGT. Exclusion criteria are (1) trials for other surgeries, such as hepatic surgery, gastrectomy; (2) NGT intubation for children; and (3) incomplete data or with limited outcomes.

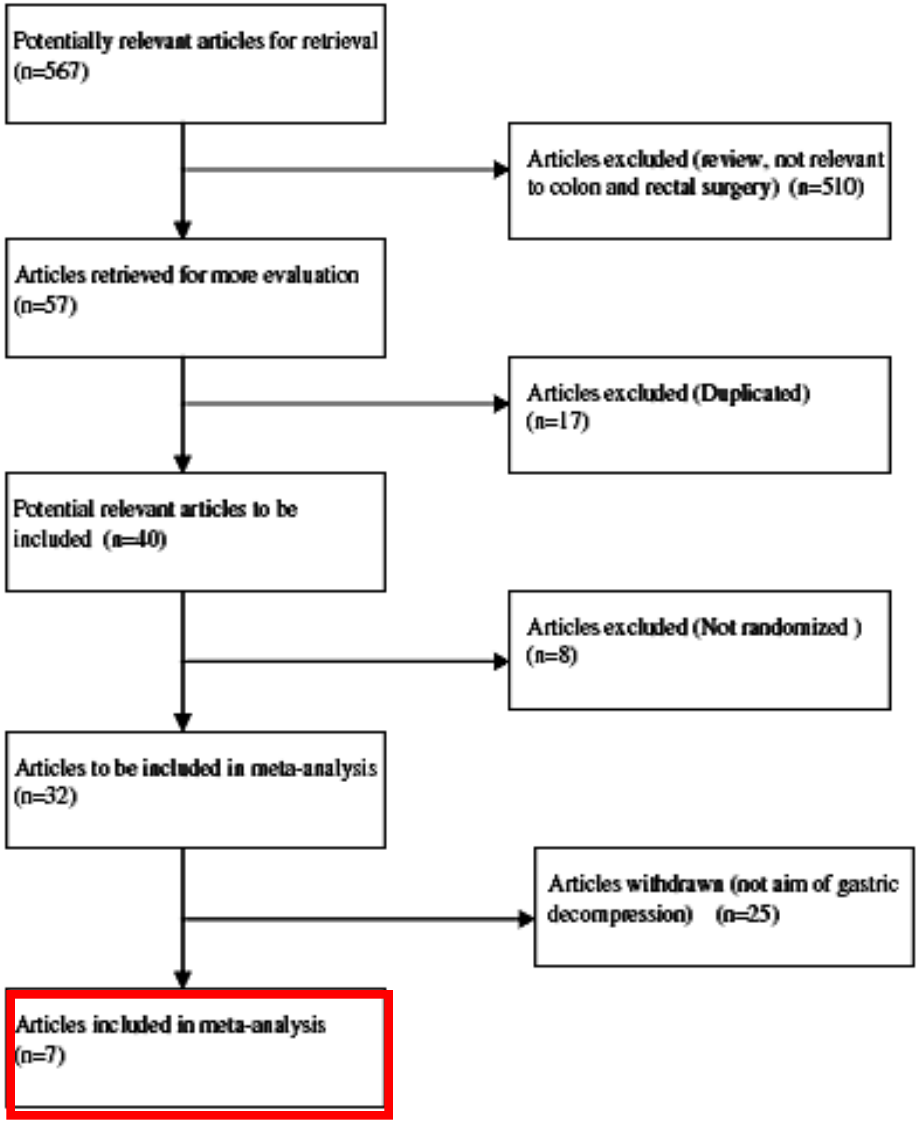

Fig. 1 QUOROM diagram showing study methodology. RCT, randomized controlled trial

文獻二評讀3

- 評估收納研究/文獻的品質
- yes
  - Two reviewers
  - Sample size
  - Modified Jadad Scale
    - 隨機分派方式
    - blinding
    - 流失率

(Rao, et al., 2011)

文獻二評讀4

- Methodological quality of trails
  - Modified Jadad Scale “4~5”

Table 1 Characteristics of trials included in the review and quality access

Study	Unicenter	Prospective	Randomized	How to randomize	Definition of non-NGT	No. of patients	Modified Jadad Scale
Colvin 1986	Yes	Yes	Yes	Computer-generated random number allocation	Tube were removed prior to the termination of anesthesia	92	5
Wolff 1989	Yes	Yes	Yes	Randomization table	Tubes were removed in the recovery room	535	5
Liu 1996	Yes	Yes	Yes	Not referred	No tubes inserted	79	4
Ortiz 1996	Yes	Yes	Yes	Not referred	Tubes were removed in the post anesthesia care unit	188	4
Feo 2004	Yes	Yes	Yes	A computerized randomization list	No tubes inserted	100	5
Lei 2005	Yes	Yes	Yes	Not referred	Tubes were removed immediately after operation	368	4
Racette 1987	Yes	Yes	Yes	Not referred	Tubes were removed in the recovery room	56	4

(Rao, et al., 2011)

文獻二評讀4

- 合理的合併結果？
  - Yes, “Review Manager 5.0”
  - 測量研究間異質性
    - 以Cochrane Q-test 分析
      - 以 I-square index 來衡量異質性的變異大小
  - 合併結果
    - 沒有異質性存在：4 Fixed-effect model
    - 有異質性存在：3 Random-effect model
- 精確呈現C.I. and P value

(Rao, et al., 2011)

文獻二評讀5

- 出版性偏差(Publication bias) ： Funnel plots
  - 拿掉任一篇文章並不影響主要結果(Vomittint,tube replacement,pharyngolaryngitis,Intestinal obsturction,Respiratory infection,wound infection)的統計差異程度
  - respiratory infection： 研究間差異小，結論可靠性高

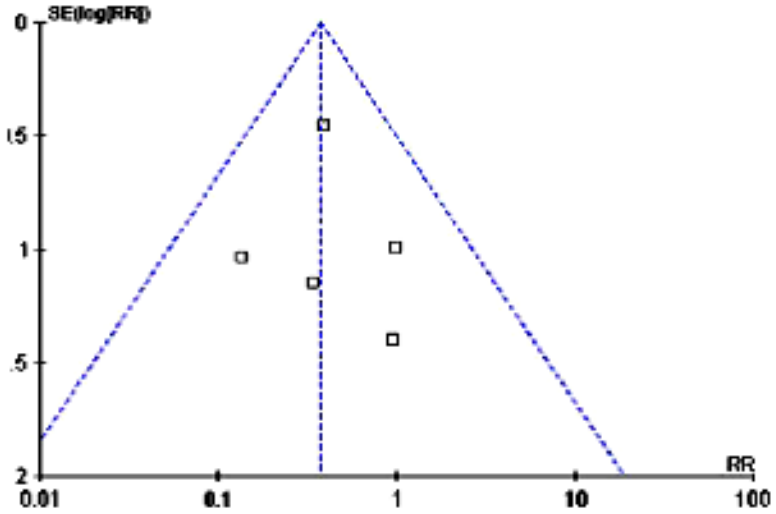

Fig. 9 Funnel plot of articles extracted to this meta-analysis: respiratory infection

Symmetry,similar

(Rao, et al., 2011)

文獻三精要內容1

"Early oral feeding after colorectal resection:a Randomized controlled study"

- 證據等級：II
- 第一作者： CARLO V. FEO,2004
- 研究目的/研究設計
  - 探討結直腸切除術後病人未以鼻胃管引流並且早期進食在罹病率、術後噁心嘔吐、腸功能恢復、術後住院天數、病人安適狀態及生活品質上的影響
  - 前瞻性隨機分配臨床試驗

(Feo, et al., 2004)

文獻三精要內容2

- 取樣方式/樣本數
  - 立意取樣
    - 2000/3~2002/7 with colorectal resection for cancer (N=100)
    - 排除1.腹部曾進行過手術2.行低位結直腸切除或腹部會陰切除術 3.癌症轉移
  - 隨機分配
    - group A (N=50) ，鼻胃管留置到排氣後移除，先流質再採漸進式飲食
    - group B (N=50)，無鼻胃管留置，術後第一天開始清流質再採漸進式飲食

(Feo, et al., 2004)

文獻三精要內容3

- 研究變項
  - 自變項：nasogastric tube、
    No nasogastric tube and early oral feeding
  - 依變項： complications(fever/wound infection/wound dehiscence),Nausea,Vomit,Nasogastric tube, Intestinal activity,Bowel movement,Hospital stay
- 統計方法
  - Two-tailed unpaired Student's t-test
  - X2-test to evaluate proportions
- 結果：嘔吐及鼻胃管重置有顯著差異(P＜0.05)，其餘依變項均無顯著差異

(Feo, et al., 2004)

Jadad Quality score

☑2 分：computerized randomization list

☑1分：未描述雙盲試驗的方式

☑1 分： 217依排除條件剔除117人共收樣100人(無人退出)。

◎總分4分

◎文獻二(Rao,2011)中評5分

(Feo, et al., 2004)

文獻四精要內容1

"Early removing gastrointestinal decompression and early oral feeding improve patients' rehabilitation after colorectostomy"

- 證據等級：II
- 第一作者：Zhou, T. (2006）
- 研究目的/研究設計
  - 評估結腸直腸癌術後早期移除鼻胃管及早期由口進食之可行性及安全性。
  - 隨機分配臨床試驗

(Zhou, et al., 2006)

文獻四精要內容2

- 取樣方式/樣本數
  - 立意取樣
    - 2004/1~2005/9 patients receiving excision and anastomosis for colorectal tumor(N=316)
  - 隨機分配
    - 實驗組(N=161)：術後12~24小時移除鼻胃管，立即喝水再採漸進式飲食
    - 控制組(N=155)：術後等排氣或解便後再移除鼻胃管的病人

（Zhou, et al., 2006）

文獻四精要內容3

- 研究變項
  - 自變項：術後12~24小時移除鼻胃管並進食、術後等排氣或解便後再移除鼻胃管
  - 依變項： the time to fi rst passage of flatus, the time to first passage of stool, the time elapsed postoperative stay, postoperative complications (anastomotic leakage, acute dilation of stomach,wound infection and dehiscense, fever, pulmonary infection and pharyngolaryngitis)
- 統計方法
  - 類別變項X^2 Test、連續變項Student's *t* test
  - SPSS for Windows Ver.11.5

（Zhou, et al., 2006）

文獻四精要內容4

- 結果

Table 2 Clinical features and complications of experimental and control groups

Parameters	Experimental group	Control group (n = 161)	P value (n = 155)
Time to first passage of flatus (d)	3.0±0.9	3.6±1.2[b]	0.000
Time to first passage of stool (d)	4.1±1.1	4.8±1.4[b]	0.000
Postoperative stay (d)	8.4±3.4	9.6±5.0[a]	0.016
Total complication			
Anastomotic leakage (n%)	2(1.24)	4(2.58)	0.441
Acute dilation of stomach (n%)	3(1.86)	1(0.06)	0.623
Wound complication (n%)	4(2.48)	3(1.94)	1.000
Fever (n%)	6(3.73)	15(9.68)[a]	0.042
Pulmonary infection (n%)	1(0.62)	7(4.52)[a]	0.034
Pharyngolaryngitis (n%)	5(3.11)	36(23.2)[b]	0.000

[a]P<0.05 *vs* experimental group; [b]P<0.001 *vs* experimental group.

（Zhou, et al., 2006）

Jadad Quality score

☑1 分：沒有詳細說明如何產生隨機的方式
☑1 分：未描述如何進行雙盲試驗
☑1 分：沒有流失收案病患

◎總分3分

（Zhou, et al., 2006）

實證應用

- 病人接受結、直腸手術後病人若在24小時內拔除鼻胃管與排氣後拔除鼻胃管相較之下

優缺點	結果	第一作者/年代	等級
缺點	增加嘔吐及管路重置的機會	Rao, W. (2011)	I
		Feo, C. V. (2004)	II
優點	減少咽喉炎、呼吸道感染之發生率	Rao, W. (2011)	I
		Zhou, T. (2006)	V
	減少發燒之發生率	Zhou, T. (2006)	V
	第一次排氣、排便之天數更短(縮短術後腸道功能恢復天數)	Zhou, T. (2006)	V
?	未有足夠證據證明會增加腹脹機會	Tanguy, M.(2007)	II

臨床重要性-NNT (The Number Needed to Treat)

- 病人接受結、直腸手術後24小時內拔除鼻胃管與排氣後拔除鼻胃管相較之下
  - 每5位病人可減少一位病人發生咽喉炎(P<0.00001;95%CI [0.08, 0.26])
    - EVENT=Pharyngolaryngitis
    - EER=10/315=0.0317
    - CER=77/320=0.2406
    - NNT=1/ARR=1/(0.2406-0.0317)=4.78≒5人
  - 每24位病人減少一位病人發生呼吸道感染(P=0.004;95% CI [0.19, 0.74])
    - EVENT=Respiratory infection
    - EER=10/389=0.0257
    - CER=27/392=0.0688
    - NNT=1/ARR=1/(0.0688-0.0257)=23.1≒24人

(Rao, et al., 2011)

臨床重要性NNH (The number needed to harm)

- 病人接受結、直腸手術後24小時內拔除鼻胃管與排氣後拔除鼻胃管相較之下
  - 每5位病人增加一位病人出現嘔吐(P<0.00001;95% CI [2.12, 3.83])
    - EVENT=Vomiting
    - EER=138/444=0.3108
    - CER=50/458=0.1091
    - NNT=1/ARR=1/(0.3108-0.1091)=4.95≒5人
  - 每9位病人增加一位病人需要管路重置 (P<0.00001;95% CI [2.34, 6.52])
    - EVENT=Replacement
    - EER=66/434=0.1520
    - CER=17/445=0.0382
    - NNT=1/ARR=1/(0.152-0.0382)=8.78≒9人

(Rao, et al., 2011)

病人的價值及喜好

- 置入鼻胃管減壓造成病人不適，術後病人常會主動要求移除或自行拔除鼻胃管。
- 鼻胃管留置很難達到隨機、病人會拒絕鼻胃管留置
  - Wolff等人(1989)以隨機分配臨床試驗方式探討“接受結、直腸手術後病人以哪種鼻胃管引流常規對病人較有益處”，收案535人中有33人拒NG decompression 而納入控制組。

結語

- 實證結果、病人喜好、臨床重要性
  - 結、直腸手術病人術後24小時內移除鼻胃管比排氣後移除鼻胃管有較低之發燒、咽喉炎及呼吸道感染等合併症發生率。
  - 接受結、直腸手術病人術後若無嘔吐情形，建議在24小時內拔除鼻胃管。

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結語

以上簡報完畢
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