實證醫學病例討論

科別：小兒外科

職級：R2

姓名：蔡鋒繼

臨床場景(clinical scenario)

A 17 year-old female…

- Chief complaint:
  - epigastralgia was noted since 4/22 evening
- Present illness:
  - epigastralgia with RLQ shift since 4/22 evening
  - Associated symptom and sign:
    - fever (+), mild, poor appetite (+), nausea/vomiting (+)
  - Chart number:11401142

Lab Data and Examination

- PE: RLQ tenderness with positive McBurney's point tenderness
- Plain abdomen: local ileus
- WBC: 15900/uL

Diagnosis & Management

- Suspect acute appendectomy
  →Laparoscopic appendectomy

Asking (提出臨床問題)

提出 background questions

Background question

- The therapeutic options of acute appendicitis ?
  - Operative ?
  - Non-operative ?

提出 foreground questions

寫成PICO

P	17 y/o female with acute suppurative appendicitis
I	Laparoscopic appendectomy
C	Antibiotic treatment
O	Clinical improvement of symptoms and signs

搜尋最有用的資料

先從已經過評讀的database開始找起
(system, synopses, synthesis)

最後再找尚未經過嚴格評讀的study

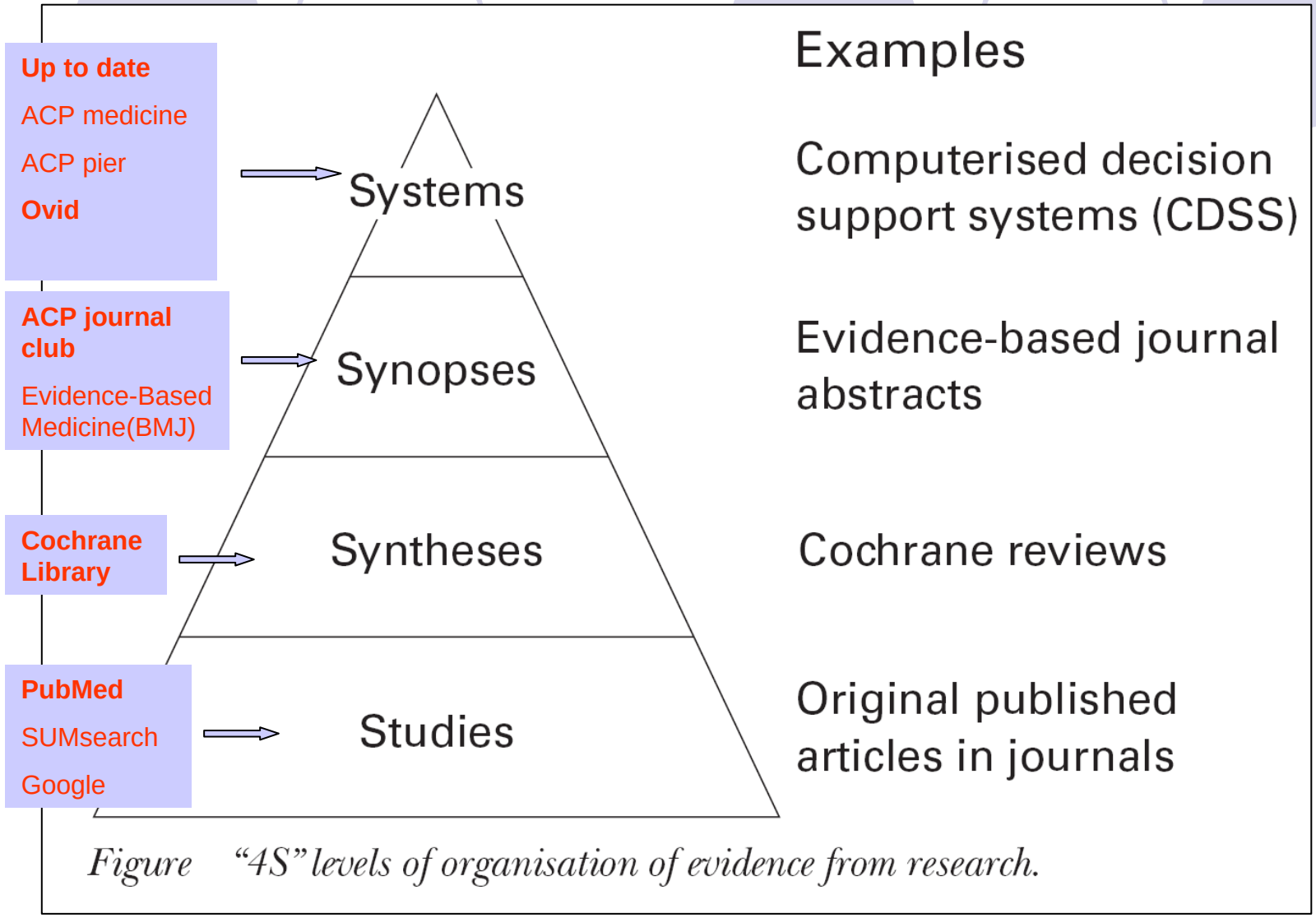
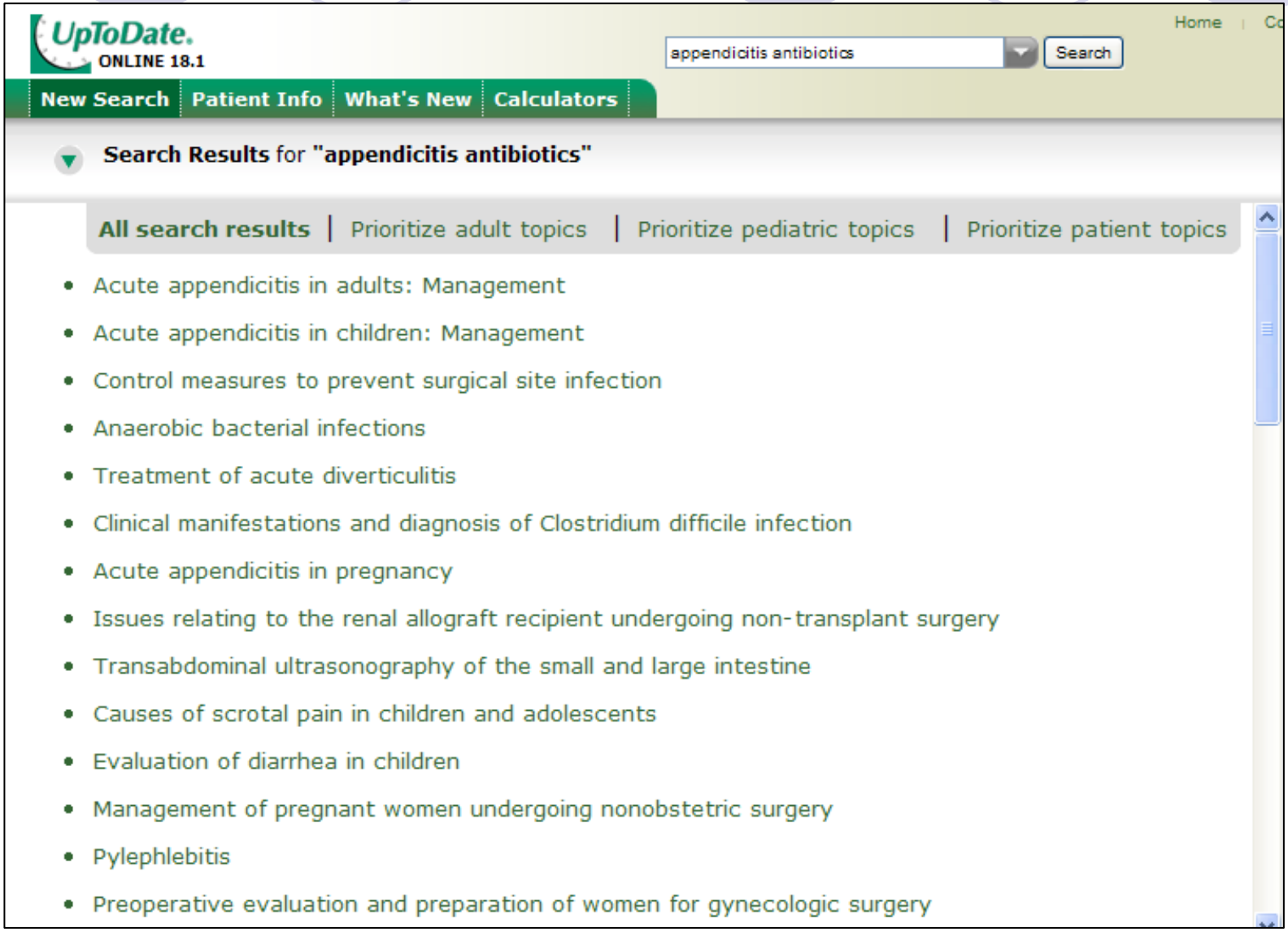


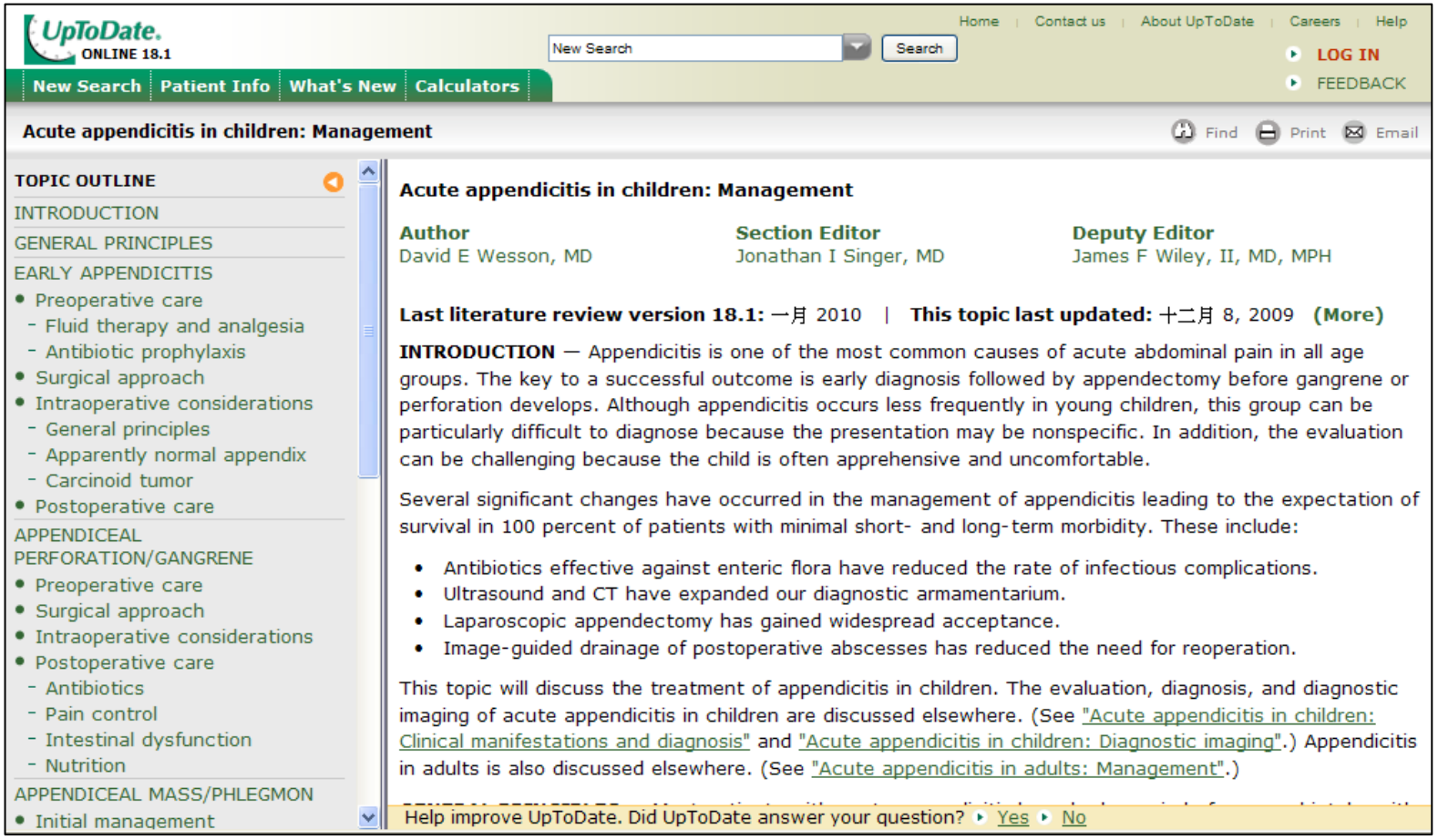
Figure "4S" levels of organisation of evidence from research.

搜尋Systems-
Key word: Appendicitis, antibiotics



搜尋到的文章標題

- **Title: Acute appendicitis in children: Management**



搜尋到的文章內容

- Early appendicitis
  - patients with early appendicitis have the appendix removed (**Grade 1A**).
  - a laparoscopic approach be used in preference to an open approach when feasible (**Grade 2B**).
  - when an apparently normal appendix is found, it be removed (**Grade 2C**).
- Advanced appendicitis
  - a laparoscopic approach be used when surgeons who are well trained in this technique are available, even in advanced cases (**Grade 2C**).
  - continuing intravenous antibiotics until the child is eating well, afebrile, and has a normal WBC (**Grade 2C**).
- Appendiceal mass/phlegmon
  - patients who present late, are not toxic, and have a well-localized, tender mass in the right lower quadrant without signs of generalized peritonitis be initially managed nonoperatively (**Grade 1B**).
  - Although nonoperative management is recommended by some, we suggest interval appendectomy 8 to 12 weeks following resolution of the initial episode, particularly for children with an appendicolith (**Grade 2C**).

搜尋Synopses，ACP Journal Club

- Key word:

  “appendicitis”

  - Only 3 matches

META-ANALYSIS

Nonsurgical Treatment of Appendiceal Abscess or Phlegmon

A Systematic Review and Meta-analysis

Roland E. Andersson, PhD, MD,† and Max G. Petzold, PhD‡*

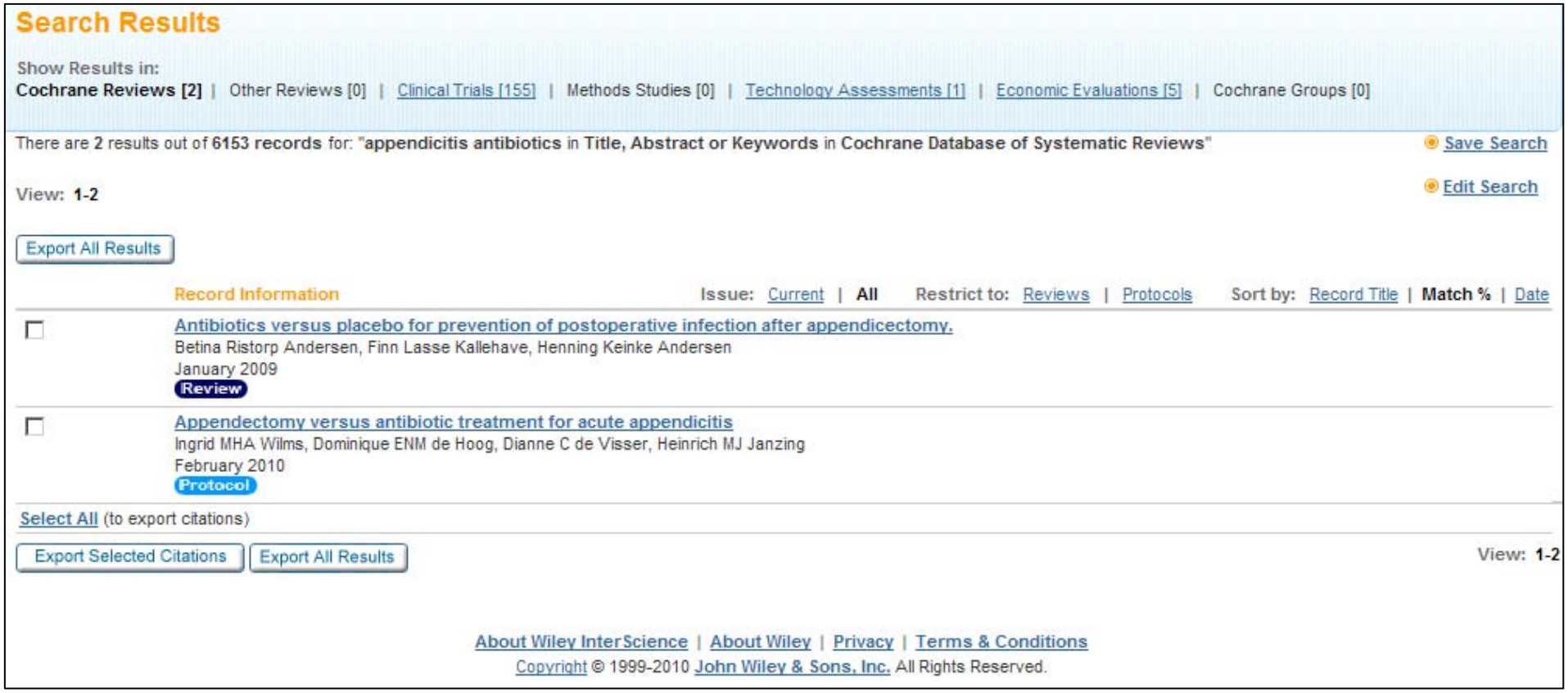
(*Ann Surg* 2007;246: 741–748)

- Level IIa
- Systemic Review of Cohort Studies with Homogeneity

- **Summary Background Data:**
  - Patients with appendiceal abscess or phlegmon are traditionally managed by nonsurgical treatment and interval appendectomy. This practice is controversial with proponents of immediate surgery and others questioning the need for interval appendectomy.
- **Conclusions:**
  - The results of this review of mainly retrospective studies support the practice of nonsurgical treatment without interval appendectomy in patients with appendiceal abscess or phlegmon.

搜尋 Syntheses, Cochrane Library

- Key word: appendicitis, antibiotics



Search Results

Show Results in:
Cochrane Reviews [2] | Other Reviews [0] | Clinical Trials [155] | Methods Studies [0] | Technology Assessments [1] | Economic Evaluations [5] | Cochrane Groups [0]

There are **2** results out of **6153 records** for: "**appendicitis antibiotics** in **Title, Abstract or Keywords** in **Cochrane Database of Systematic Reviews**"

Save Search

Edit Search

View: **1-2**

Export All Results

Record Information — Issue: Current | **All** — Restrict to: Reviews | Protocols — Sort by: Record Title | **Match %** | Date

☐ Antibiotics versus placebo for prevention of postoperative infection after appendicectomy.
Betina Ristorp Andersen, Finn Lasse Kallehave, Henning Keinke Andersen
January 2009
Review

☐ Appendectomy versus antibiotic treatment for acute appendicitis
Ingrid MHA Wilms, Dominique ENM de Hoog, Dianne C de Visser, Heinrich MJ Janzing
February 2010
Protocol

Select All (to export citations)

Export Selected Citations | Export All Results

View: **1-2**

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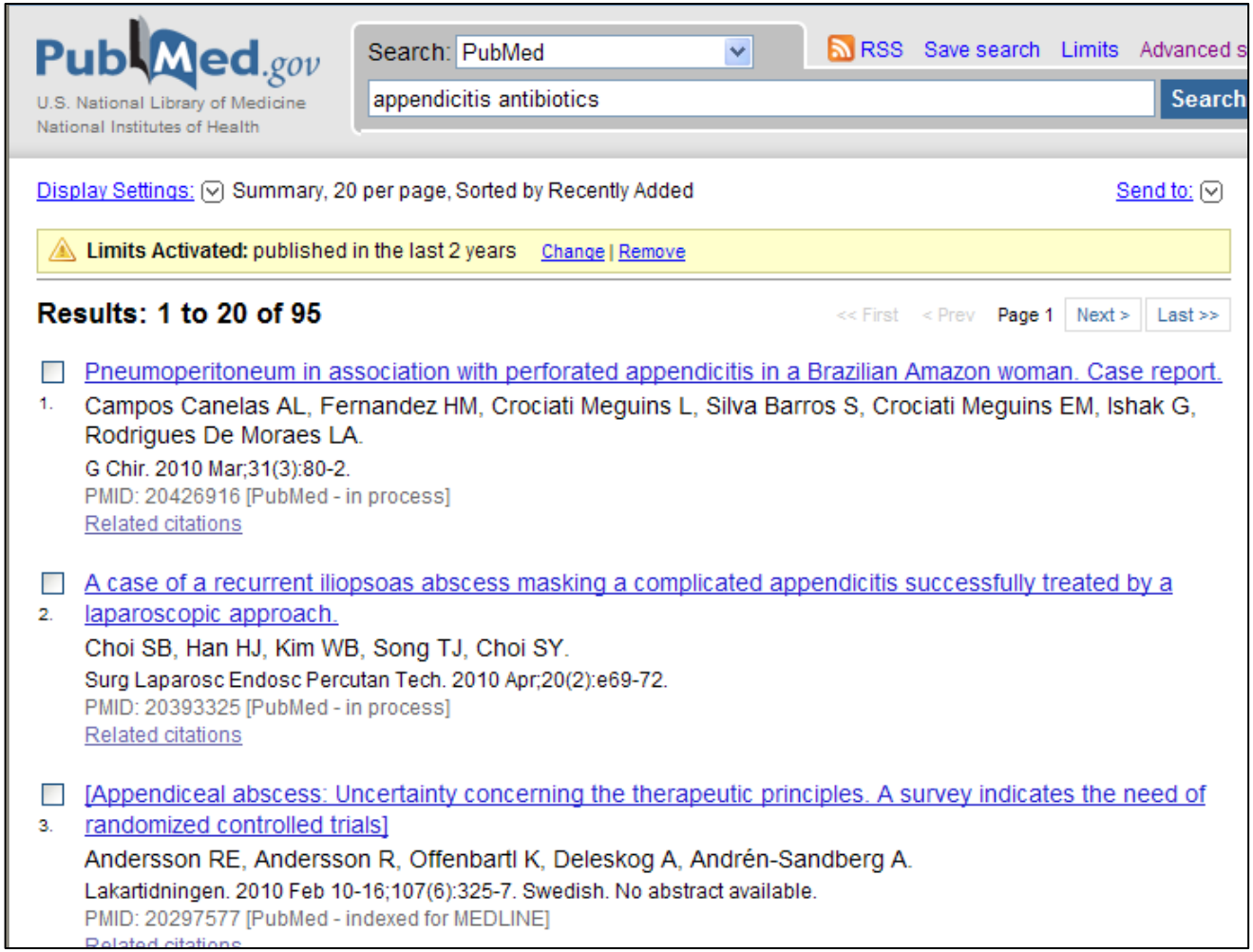
搜尋Studies, Pubmed

- Key word: appendicitis antibiotics
  - Publication date: from 2008 till now



Search Result 1

Surg Infect (Larchmt). 2008 Aug;9(4):481-8.

Surgery for appendicitis: is it necessary?

Mason RJ.

Division of Emergency Surgery, Department of Surgery, Keck School of Medicine of the University of Southern California and Los Angeles County and USC Medical Center, Los Angeles, California, USA. rmason@surgery.usc.edu

- Level IIa
- Systemic Review of Cohort Studies with Homogeneity

- BACKGROUND:
  - In this prospective study, operative and nonoperative management of acute appendicitis were evaluated regarding their safety and cost effectiveness.
- CONCLUSION:
  - With its high success rate and cost effectiveness, medical treatment seems to be a good alternative to the gold standard therapy of surgery in management of acute appendicitis.

Search Result 2

J Chir (Paris). 2009 Oct;146 Spec No 1:17-21. Epub 2009 Oct 28.

[Can acute appendicitis be treated by antibiotics and in what conditions?]

[Article in French]

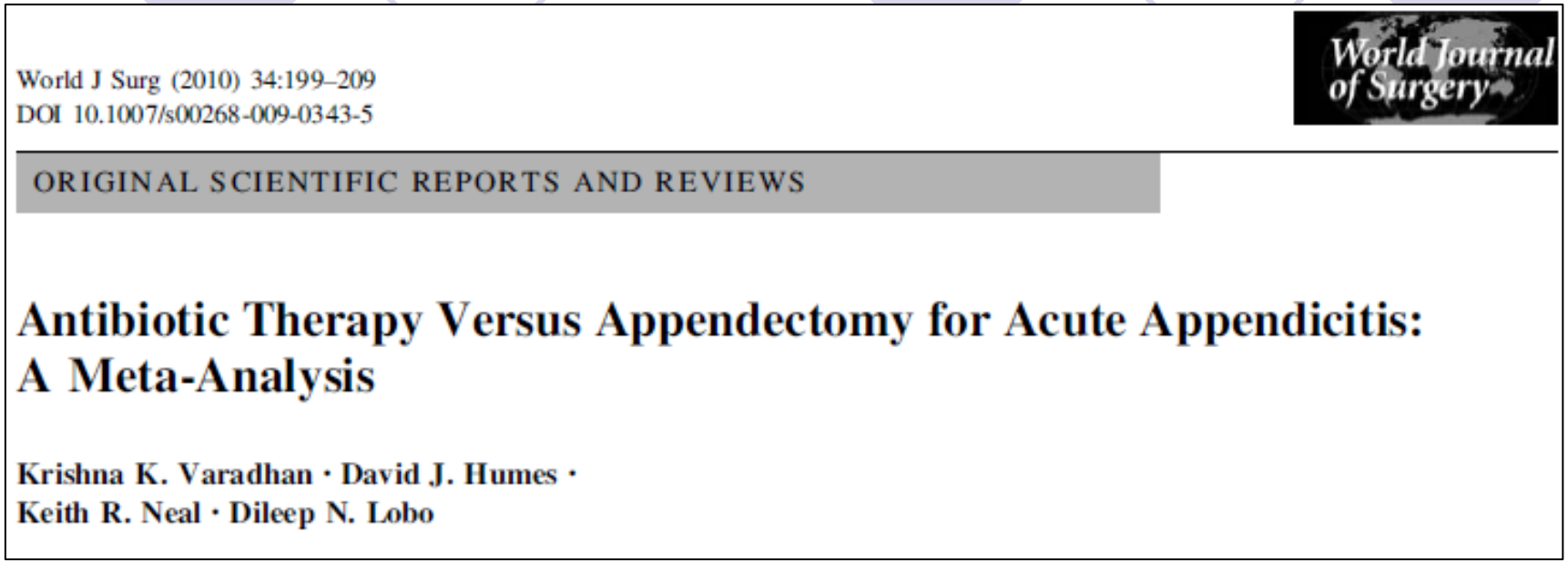
Vons C.

Service de chirurgie digestive, hôpital Jean-Verdier, avenue du 14-Juillet, 93140 Bondy cedex, France. corinne.vons@jvr.aphp.fr

- Level IIa
- Systemic Review of Cohort Studies with Homogeneity

- A meta-analysis in 2007 that collected the results of 44 prospective studies showed that antibiotics were efficacious in 92.8% of cases of appendicitis complicated by local peritonitis, with percutaneous drainage of an abscess when necessary. No predictive factor for failure was identified. The failure of antibiotic treatment did not increase morbidity. Over time and on the whole, the recurrence rate was only 8.9%. The risk of cancer of the appendix (1.5%) nonetheless led to the recommendation of an interval appendectomy for adults.
- Four randomized controlled trials have compared antibiotic treatment with an appendectomy for the treatment of uncomplicated acute appendicitis. The efficacy of the antibiotic treatment ranged from 86 to 100% and the recurrence rate from 10.4 to 35%.

Search Result 3



World J Surg (2010) 34:199–209
DOI 10.1007/s00268-009-0343-5

World Journal of Surgery

ORIGINAL SCIENTIFIC REPORTS AND REVIEWS

Antibiotic Therapy Versus Appendectomy for Acute Appendicitis: A Meta-Analysis

Krishna K. Varadhan · David J. Humes · Keith R. Neal · Dileep N. Lobo

- Level Ia
- Systemic Review of RCTs

- Background
  - Antibiotic treatment has been shown to be effective in treating selected patients with acute appendicitis, and three randomized controlled trials (RCTs) have compared the efficacy of antibiotic therapy alone with that of surgery for acute appendicitis. The purpose of this metaanalysis of RCTs was to assess the outcomes with these two therapeutic modalities.
- Conclusions
  - This meta-analysis suggests that although antibiotics may be used as primary treatment for selected patients with suspected uncomplicated appendicitis, this is unlikely to supersede appendectomy at present. Selection bias and crossover to surgery in the RCTs suggest that appendectomy is still the gold standard therapy for acute appendicitis.

Appraisal (嚴格評讀)

對找到的文章
進行critical appraisal

證據等級

Oxford Centre for Evidence-based Medicine Levels of Evidence (May 2001)

Level	Therapy/Prevention, Aetiology/Harm	Prognosis	Diagnosis	Differential diagnosis/symptom prevalence study	Economic and decision analyses
1a	SR (with homogeneity*) of RCTs	SR (with homogeneity*) of inception cohort studies; CDR† validated in different populations	SR (with homogeneity*) of Level 1 diagnostic studies; CDR† with 1b studies from different clinical centres	SR (with homogeneity*) of prospective cohort studies	SR (with homogeneity*) of Level 1 economic studies
1b	Individual RCT (with narrow Confidence Interval‡)	Individual inception cohort study with ≥ 80% follow-up; CDR† validated in a single population	Validating** cohort study with good††† reference standards; or CDR† tested within one clinical centre	Prospective cohort study with good follow-up****	Analysis based on clinically sensible costs or alternatives; systematic review(s) of the evidence; and including multi-way sensitivity analyses
1c	All or none§	All or none case-series	Absolute SpPins and SnNouts††	All or none case-series	Absolute better-value or worse-value analyses ††††
2a	SR (with homogeneity*) of cohort studies	SR (with homogeneity*) of either retrospective cohort studies or untreated control groups in RCTs	SR (with homogeneity*) of Level >2 diagnostic studies	SR (with homogeneity*) of 2b and better studies	SR (with homogeneity*) of Level >2 economic studies
2b	Individual cohort study (including low quality RCT; e.g., <80% follow-up)	Retrospective cohort study or follow-up of untreated control patients in an RCT; Derivation of CDR† or validated on split-sample§§§ only	Exploratory** cohort study with good†††reference standards; CDR† after derivation, or validated only on split-sample§§§ or databases	Retrospective cohort study, or poor follow-up	Analysis based on clinically sensible costs or alternatives; limited review(s) of the evidence, or single studies; and including multi-way sensitivity analyses
2c	"Outcomes" Research; Ecological studies	"Outcomes" Research		Ecological studies	Audit or outcomes research
3a	SR (with homogeneity*) of case-control studies		SR (with homogeneity*) of 3b and better studies	SR (with homogeneity*) of 3b and better studies	SR (with homogeneity*) of 3b and better studies
3b	Individual Case-Control Study		Non-consecutive study; or without consistently applied reference standards	Non-consecutive cohort study, or very limited population	Analysis based on limited alternatives or costs, poor quality estimates of data, but including sensitivity analyses incorporating clinically sensible variations.
4	Case-series (and poor quality cohort and case-control studies§§)	Case-series (and poor quality prognostic cohort studies***)	Case-control study, poor or non-independent reference standard	Case-series or superseded reference standards	Analysis with no sensitivity analysis
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on economic theory or "first principles"

Produced by Bob Phillips, Chris Ball, Dave Sackett, Doug Badenoch, Sharon Straus, Brian Haynes, Martin Dawes since November 1998.

Apply

結合醫學倫理方法

將study的結果應用在病人身上

醫療現況	病人意願
從期刊資料得知手術目前仍是治療早期急性闌尾炎最佳的方式，但也是有其選擇的條件，依照個別情況選擇最適合的方法	患者經考量後，決定接受手術治療。
生活品質	社會脈絡
此次手術後，病人自覺術後腹痛改善佳，僅住院三天後即出院返家。	由於恢復情形良好，故沒有社會脈絡的問題。

Conclusion

總結與討論

Conclusion

- Despite surgical appendectomy is the standard, several investigators have studied the conservative antibiotic treatment of acute appendicitis with good results. They described a low morbidity, low mortality rate and a recurrence rate between 7-15%
- After successful nonsurgical treatment, no interval appendectomy is indicated, but the patient should be informed about the risk of recurrence.

Audit（自我評估）

在「提出臨床問題」方面的自我評估

- 我提出的問題是否具有臨床重要性？有，因為若需要手術的話要明確的做出決定，若能保守治療的話就保守治療，必竟手術有一定的風險性。
- 我是否明確的陳述了我的問題？
  - 我的foreground question 是否可以清楚的寫成PICO？可
  - 我的background question是否包括what, when, how, who等字根？有，但未全能括
- 我是否清楚的知道自己問題的定位？（亦即可以定位自己的問題是屬於診斷上的、治療上的、預後上的或流行病學上的），並據以提出問題？知道，屬於治療範疇
- 對於無法立刻回答的問題，我是否有任何方式將問題紀錄起來以備將來有空時再找答案？暫無無法立刻回答的問題

在「搜尋最佳證據」方面的自我評估

- 我是否已盡全力搜尋？是
- 我是否知道我的問題的最佳證據來源？是
- 我是否從大量的資料庫來搜尋答案？是
- 我工作環境的軟硬體設備是否能支援我在遇到問題時進行立即的搜尋？是，學校買的版權資源非常便利
- 我是否在搜尋上愈來愈熟練了？是
- 我會使用「斷字」、布林邏輯、同義詞、MeSH term，限制(limiters)等方法來搜尋？部份會
- 我的搜尋比起圖書館人員或其他對於提供病人最新最好醫療有熱情的同事如何？中上程度吧

關於「嚴格評讀文獻」方面的自我評估

- 我是否盡全力做評讀了？盡力而為
- 我是否了解worksheet每一項的意義？多數了解
- 評讀後，我是否做出了結論？是

關於「應用到病人身上」的自我評估

- 我是否將搜尋到的最佳證據應用到我的臨床工作中？是
- 當搜尋到的最佳證據與實際臨床作為不同時，我如何解釋？目前無不同，故暫不需解釋

改變「醫療行為」的自我評估

- 當最佳證據顯示目前臨床策略需改變時，我是否遭遇任何阻止改變的阻力？沒有，目前證據未改變臨床策略
- 我是否因此搜尋結果而改變了原來的治療策略？做了那些改變？沒有改變

效率評估

- 這篇報告，我總共花了多少時間？大約二十個小時
- 我是否覺得這個進行實證醫學的過程是值得的？值得，疑問得到解答，也更熟悉EBM的操作
- 我還有那些問題或建議？評讀paper的方法不甚熟練

以上簡報完畢
謝謝各位聆聽
敬請指教