

Evidence-Based Medicine

實證醫學 病例討論報告

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Practicing EBM

- Clinical scenario - 臨床場景
- Asking - 提出問題
- Acquire - 搜尋資料
- Appraisal - 嚴格評讀
- Apply - 臨床應用
- Audit - 自我評估



Clinical scenario

- This 78 year old man was a patient of
 - (1) Sick sinus syndrome post permanent pacemaker in 2007/4
 - (2) Ischemic stroke with right hemiparesis in 2008/8
 - (3) GERD, grade A
 - (4) Hyperlipidiema
- He suffered from black color stool passage
- Colofibrosopic polypectomy: adenocarcinoma, 100cm from anal verge



Clinical scenario

Pathologic diagnosis

- Intestine, large, colon, ascending, right hemicolectomy, adenocarcinoma, grade I (pT2N0Mx)
- Intestine, small, ileum, resection, negative for malignancy
- Appendix, appendectomy, negative for malignancy
- Lymph node, regional, lymphadenectomy, reactive hyperplasia (31/31)



Asking-提出臨床問題

1. Background questions
2. Foreground questions



提出 background questions




Question 1: How to make a stage of colon cancer?

Stage Grouping

Stage	T	N	M	Dukes*	MAC*
■ 0	<u>Tis</u>	N0	M0	—	—
■ I	T1	N0	M0	A	<u>A</u>
	T2	N0	M0	A	B1
■ IIA	T3	N0	M0	B	B2
■ IIB	T4	N0	M0	B	B3
■ IIIA	T1-T2	N1	M0	C	C1
■ IIIB	T3-T4	N1	M0	C	C2/C3
■ IIIC	Any T	N2	M0	C	C1/C2/C3

*Dukes B is a composite of better (T3 N0 M0) and worse (T4 N0 M0) prognostic groups, as is Dukes C (Any TN1 M0 and Any T N2 M0). MAC is the modified Astler-Coller classification.



Question 2: How to treat colon cancer according to the different stages?

- **Stage III** disease — We recommend **adjuvant systemic therapy** after resection of node-positive colon cancer (**Grade 1A**) - six month course of **FOLFOX**
- **Stage II** disease — Based upon the available data, **adjuvant chemotherapy cannot be considered as a standard** of care for resected stage II colon cancer
- The benefits of adjuvant chemotherapy (an approximately **30 % reduction in the risk of disease recurrence** and a **22 - 32 % reduction in mortality**) in **stage III disease**, whereas benefit in stage II disease remains controversial



提出 foreground questions

For patients of colon cancer, is numbers of the lymph node evaluation associated with survival rate?



Guidelines 2000 for colon and rectal cancer surgery. Nelson H et.al. *J Natl Cancer Inst* 2001 Apr 18;93(8):583-96

- To achieve a high degree of **accuracy (>90%)**, a **minimum of 12 lymph nodes negative** for disease must be examined to confirm that the disease does not involve the nodes.
 - **Detection of lymph node metastases in colorectal carcinoma before and after fat clearance.** Scott KW, Grace RH. *Br J Surg* 1989;76:1165–7
 - Level of evidence: **IIIb**



American Joint Committee on Cancer (AJCC) 2006 6th edition

- The number of nodes examined from an operative specimen has been reported to be associated with improved survival, possibly because of increased accuracy in staging.
- It is important to obtain **at least 12–14 lymph nodes** in radical colon and rectum resections
- Level of evidence: ?



PICO model

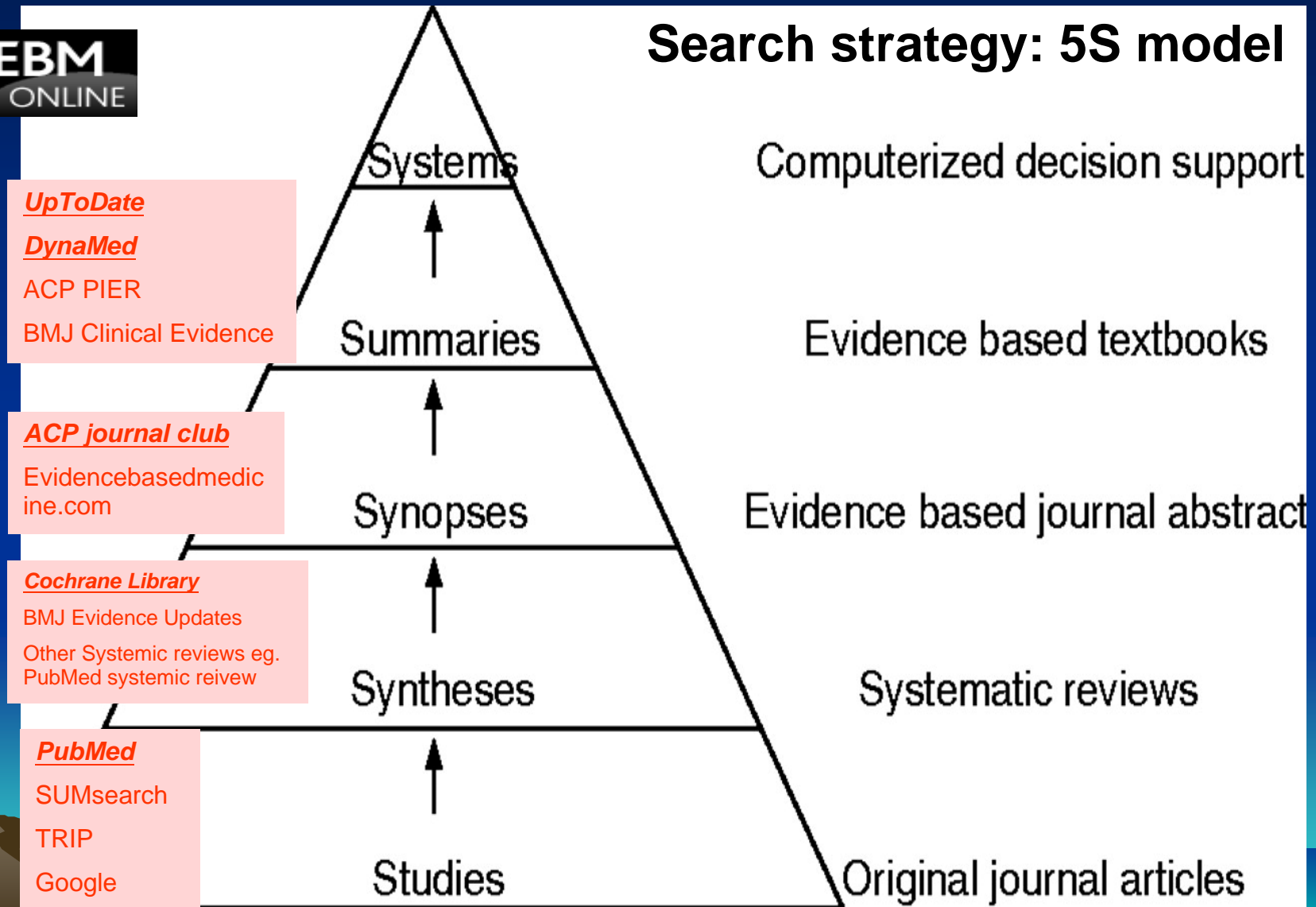
P atient	Colon cancer
I ntervention	Numbers of lymph node evaluation < 12
C omparison	Numbers of lymph node evaluation \geq 12
O utcome	Overall survival rate



Acquire-搜尋最有用的資料

EBM
ONLINE

Search strategy: 5S model



搜尋 Summaries



- Key Words: **Colon cancer, lymph node**

搜尋到的文章標題:

- **Surgical management of primary colon cancer**, Carolyn C Compton, MD, PhD et. al., Last literature review version 17.1: 一月 2009 | This topic last updated : 一月21, 2009
- **Pathology and prognostic determinants of colorectal cancer**, Miguel A Rodriguez-Bigas, MD et. al., Last literature review version 17.1: 一月 2009 | This topic last updated : 一月30, 2009

Surgical management of primary colon cancer

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- Resection margins
- Regional lymphadenectomy
- Sentinel node mapping
- Summary

SURGICAL TECHNIQUE:

- Right hemicolectomy
- Extended right hemicolectomy
- Transverse colectomy
- Left hemicolectomy
- Sigmoid colectomy

performing a resection with anastomosis. Therefore, even surgeons who have eliminated the cathartic cleansing regimens from their practices still recommend one or two enemas prior to elective resection on the day of surgery so that the left colon is relatively empty. Whether or not a mechanical bowel preparation is performed, prophylactic antibiotics should be administered.

Resection margins — Proximal and distal resection margins should be at least 5 cm from the tumor [14]. These margins should allow for an adequate resection of the appropriate segment of the bowel with its vascular supply and associated lymphatics. For patients undergoing right hemicolectomy, the length of ileum does not influence local recurrence rates [14]. (See "Right hemicolectomy" below).

Regional lymphadenectomy — Regional lymphadenectomy provides important prognostic information that guides adjuvant treatment and is of therapeutic value as well. There is a direct correlation between the number of lymph nodes evaluated per patient after surgical resection and survival [15]. Node counts seem to be considerably less predictive of survival when assessed at the hospital level [16]. (See "Pathology and prognostic determinants of colorectal cancer", section on Category I factors).

Consensus guidelines recommend that at least 12 lymph nodes be assessed for adequate staging [14,17-19]. The American Society of Clinical Oncology (ASCO) encourages the use of adjuvant chemotherapy for patients with node-negative colon cancer if there are fewer than 12 nodes in the surgical specimen [20]. (See "Adjuvant therapy for resected colon cancer", section on ASCO recommendation).

Sentinel node mapping — According to the sentinel lymph node (SLN) hypothesis, tumor cells migrating from a

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Lymph node evaluation and survival after curative resection of colon cancer: systematic review. Chang GJ et.al. *J Natl Cancer Inst.* 2007 Mar 21;99(6):433-41 <Level=*Ia*>

- **BACKGROUND:** a **systematic review** of the association between LN evaluation and oncologic outcomes in colon ca
- **METHODS:** Medline, Scopus, Cochrane, and the National Guidelines Clearinghouse ,1990/01~2006/06. 61,371 patients
- **RESULTS:**
 - 17 studies from 9 countries (2 secondary analyses of multicenter randomized trials , 5 population-based observational studies, and 10 single-institution retrospective cohort studies)
 - 16 /17 studies → ↑ survival with numbers of LN in stage II colon ca
 - 4/6 studies → ↑ survival with numbers of LN in stage III colon ca
- **CONCLUSIONS:** The number of lymph nodes evaluated after surgical resection was positively associated with survival of patients with stage II and stage III colon cancer



uncertain, the lesser category (ie, T3) should be assigned.

Regional nodes — Regional lymph node involvement is one of the strongest predictors of outcome following surgical resection of CRC, second only to distant metastasis. The documentation of nodal spread is of clinical importance, since this finding prompts the recommendation of adjuvant therapy for both colon and rectal cancer. ([See "Adjuvant therapy for resected colon cancer"](#) and [see "Adjuvant therapy for resected rectal cancer"](#)).

For both colon and rectal cancers, the incidence of regional node involvement is related both to the depth of transmural invasion of the primary tumor and histologic grade. The number of involved lymph nodes is a strong predictor of outcome, as reflected in the 2002 TNM classification [22,35-38]. In an early study from the National Surgical Adjuvant Breast and Bowel Project (NSABP), patients with four or more nodes were more than twice as likely to die from CRC than those with one to three nodes [35].

In addition to the number of involved nodes, [the total number of lymph nodes in the surgical specimen directly influences the accuracy of nodal staging and prognosis, particularly for stage II disease \[39-43\]](#). In a meta-analysis of 17 studies examining this issue, [the number of nodes examined per patient significantly correlated with five-year disease-free and overall survival rates in patients with stage II and even stage III disease \(show table 5\) \[40\]](#). For unclear reasons, node counts are considerably less predictive of survival when assessed at the hospital level, particularly for patients with stage III disease [44-46].

The use of a lymph node ratio (LNR, the ratio of metastatic to examined lymph nodes) has been suggested as a means of incorporating both the number of involved nodes and the number examined overall into prognostic stratification [47]. In data derived from the large US Intergroup 0089 study evaluating different 5-FU-based adjuvant therapy strategies in

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More extensive nodal dissection improves survival for stages I to III of colon cancer: a population-based study. Chen SL; Bilchik AJ. *Ann Surg.* 2006 Oct;244(4):602-10

- OBJECTIVE: To determine whether analyzing more lymph nodes in colon cancer specimens improves survival
- METHODS:
 - 13 population-based cancer registries that cover roughly 26% of the U.S. population, 1988 and 2000, 82,896 patients
- RESULTS: The median number of LNs was 9. Patients who had at least 15 nodes sampled as compared with 1 to 7 nodes experienced a 20.6% reduction in mortality independent of other patient and tumor characteristics
- CONCLUSIONS: Adequate lymphadenectomy at **least 15 LNs**, correlates with improved survival, independent of stage, patient demographics, and tumor characteristics
- Level of evidence: **IIb**



Optimal pathologic staging: defining **stage II** disease, Compton CC
, *Clin Cancer Res.* 2007 Nov 15;13(22 Pt 2):6862s-70

- For assignment of pN0, the minimum number of lymph nodes has been variably determined to be between 12 and 18, but the confidence level increases with increasing numbers of nodes examined
- **12 lymph nodes** be considered the minimal acceptable harvest from a careful specimen
- Level of evidence: **IIb**



搜尋 Synopses

ACP Journal Club

Evidence-Based Medicine for Better Patient Care

- Key Words: colon cancer, lymph node
- 搜尋到的文章標題:
 - nil



搜尋 syntheses



- Key Words: colon cancer, lymph node
- 搜尋到的文章標題:
 - **Colon cancer survival is associated with increasing number of lymph nodes analyzed: a secondary survey of intergroup trial INT-0089 . *J Clin Oncol* 2003 ; 21 : 2912 – 9**
 - Level of evidence: IIb

搜尋 Studies



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1: [Impact of the number of histologically examined lymph nodes on prognosis in colon cancer: a population-based study in the Netherlands.](#)

Kelder W, Inberg B, Schaapveld M, Karrenbeld A, Grond J, Wiggers T, Plukker JT.

Dis Colon Rectum. 2009 Feb;52(2):260-7.

PMID: 19279421 [PubMed - indexed for MEDLINE]

[Related Articles](#)

2: [Clinically important aspects of lymph node assessment in colon cancer.](#)

Wright FC, Law CH, Berry S, Smith AJ.

J Surg Oncol. 2009 Mar 15;99(4):248-55. Review.

PMID: 19235179 [PubMed - indexed for MEDLINE]

[Related Articles](#)

3: [Survival in stage III colon cancer is independent of the total number of lymph nodes retrieved.](#)

Tsikitis VL, Larson DL, Wolff BG, Kennedy G, Diehl N, Qin R, Dozois EJ, Cima RR.

J Am Coll Surg. 2009 Jan;208(1):42-7.

PMID: 19228501 [PubMed - indexed for MEDLINE]

[Related Articles](#)

4: [Lymph node evaluation as a colon cancer quality measure.](#)

Pinkowish MD.

CA Cancer J Clin. 2009 Jan-Feb;59(1):2-4. No abstract available.

PMID: 19147863 [PubMed - indexed for MEDLINE]

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Q lymph (0)

Q colon cancer (17) MeSH

Appraisal (嚴格評讀)

- **Lymph node evaluation and survival after curative resection of colon cancer: systematic review.** Chang GJ et.al. *J Natl Cancer Inst.* 2007 Mar 21;99(6):433-41

證據等級

Grades of Recommendation and Levels of Evidence

Grades of Recommendation	Levels of Evidence	Description of Study Design
A	1a	Systematic review (with homogeneity) of randomized clinical trials
	1b	Individual randomized clinical trials (with narrow confidence interval)
	1c	All or none (all patients died before the drug became available, but some now survive on it; or when some patients died before the drug became available, but none now die on it.)
B	2a	Systematic review (with homogeneity) of cohort studies
	2b	Individual cohort study (including low quality randomized clinical trial)
	2c	"Outcomes" research
	3a	Systemic review (with homogeneity) of case-control studies
	3b	Individual case-control study
C	4	Case series, single case reports (and poor quality cohort and case control studies)
D	5	Expert opinion without explicit critical appraisal or based on physiology or bench research
Z	6	Abstracts



Introduction

- New cases of colon cancer are diagnosed in 100000 individuals in the USA per year, and the second leading cause of cancer death
- The number of LNs recovered from colon cancer has been identified as a important measure of the quality of cancer care by many organizations
- To systematically examine the evidence that lymph node recovery and evaluation is associated with oncologic outcomes after surgical treatment of **stage II and stage III** colon cancer



METHODS - Literature Searches

- Cochrane Database
 - systematic reviews
- National Guidelines Clearinghouse database
 - colon cancer, survival outcomes related to lymphadenectomy
- MEDLINE database (Jan 1999– June 2006)
 - lymph node, colonic neoplasm/cancer, mortality / survival
- Scopus database
 - lymph node, colon cancer, survival



METHODS - Selection Criteria

- Inclusion: overall survival data, the number of lymph nodes evaluated during the curative surgical resection for colon cancer
- **Systematic review** of **17 studies from 9 countries** (2 randomized trials, 5 population-based observational studies, and 10 single-institution retrospective studies)
- The primary outcome of interest was ***overall survival***
- A total of **61371** patients were included
- **Grading the Evidence:** quality of the study design, type of data source, number of patients, quality of follow-up and monitoring, handling of missing data, and statistical methodology



RESULTS - Literature Searches

Reference	Year	Study design		Patient	LN	Stage	
Intergroup 0089 trial	2003	retrospective nested cohort studies of large multi-institutional randomized controlled trials	USA	3411	10	II/III	improved survival in stage II/III
National Intergroup Trial	2002		Italy	3491	12	B/C	improved survival in stage B
SEER registry I	2002	large population-based retrospective cohort studies from cancer registry data (National Cancer Database , SEER and Ontario Registry)	USA	8574	-	II	improved survival in stage II
NCDB	2003		USA	35787	12	II	improved survival in stage II
Kentucky Cancer Registry	2004		USA	2437	12	II	improved survival in stage II
Uppala/Orebro Registry	2005		Sweden	3735	12	II/III	improved survival in stage II/III
Ontario Registry	2006		USA	1000	-	II	-
Caplin	1998	single-institutional retrospective cohort studies	Switzerland	222	7	B/C	improved survival in stage B
Law	2003		Canada	115	7	II	improved survival in stage II
Cianchi	2002		Italy	140	9	II	improved survival in stage II
Yoshimatsu	2005		Japan	94	9	B	improved survival in stage B
Gumus	2005		Turkey	179	9	II/III	improved survival in stage III
Berberoglu	2004		Turkey	301	11	II	improved survival in stage II
Goldstein	2002		USA	745	8	II	improved survival in stage II
Sarli	2005		Japan	480	10	II	improved survival in stage II
Wong	2002		Hawaii	173	11.3	II	improved survival in stage II
Ratto	1999		Italy	487	11.4	I/II/IIIA	improved survival in stage I/II

Table 1. Five-year overall, cause-specific, and disease-free survival in the Intergroup 0089 trial by number of lymph nodes recovered*

Stage	No. of lymph nodes	Overall survival, %	P†	Cause-specific survival, %	P†	Disease-free survival, %	P†
II	<11	73	<.001	80	.015	72	.11
	11–20	80		85		79	
	>20	87		92		83	
IIIA–IIIB	<11	67	<.001	74	.002	65	<.001
	11–40	74		78		70	
	>40	90		93		93	
IIIC	1–35	51	.002	55	.018	48	.014
	>35	71		71		69	

Table 2. Five-year overall and relapse-free survival in the National Intergroup Trial for Adjuvant Therapy on Colon Cancer by number of lymph nodes recovered*

Dukes' stage	No. of lymph nodes	Overall survival, %	Uni P†	RR (95% CI)‡	P†	Relapse-free survival, %	Uni P†	RR (95% CI)‡	P†
B + C	0–7	69	.031	1.0 (referent)	.034	56	.002	1.0 (referent)	.003
	8–12	69		0.96 (0.79 to 1.17)		60		0.94 (0.79 to 1.11)	
	13–17	76		0.76 (0.60 to 0.96)		64		0.76 (0.63 to 0.93)	
	>17	76		0.79 (0.63 to 0.98)		67		0.75 (0.62 to 0.90)	
B2–B3	0–7	81	<.001			66	<.001		
	8–12	81		74					
	13–17	87		77					
	>17	89		83					
C	0–7	57	.3			47	.11		
	8–12	69		48					
	13–17	66		53					
	>17	63		54					

Table 3. Five-year overall survival from population-based cohort studies of stage II cancer*

Source, y (reference)	No. of patients	No. of lymph nodes	Overall survival, %	HR or RR (95% CI)	P		
NCDB, 2003 (8)	35 787	1–7	49.8	1.0 (referent)†	<.001‡		
		8–12	56.2	0.81 (0.77 to 0.84)			
		≥13	63.4	0.68 (0.65 to 0.71)			
Kentucky Cancer Registry, 2004 (17)	2437	1–12	56	–	<.001‡		
		>12	63	–			
Uppala/Orebro Registry, 2005 (19)	3735	1–11	~65	–	<.001‡		
		>11	~75	–			
Ontario Registry, 2006 (16)	1000	1–3	–	1.0 (referent)§	.59		
		4–6	–	0.9 (0.6 to 1.3)		.53	
		7–9	–	0.9 (0.6 to 1.3)			.03
		10–36	–	0.6 (0.4 to 1.0)			
SEER registry, 2002 (18)	8574	Each additional lymph node	–	0.98 (0.97 to 0.98)	<.001		

Table 4. Association between lymph node evaluation and 5-year overall survival in selected single-center studies

First author, year (reference)	No. of patients	Stage	No. of lymph nodes	5-y overall survival, %	HR or RR* (95% CI)	P
Caplin, 1998 (21)	222	Dukes' B	<7	49	–	.001†
			≥7	68		
		Dukes' C	<7	N/A		
			≥7	N/A		
Law, 2003 (24)	115	II	<7	62	2.99 (1.28 to 6.97)	.03†
Cianchi, 2002 (22)	140	II	≥7	86	‡	<.001†
			<9	54.9		
Yoshimatsu, 2005 (27)	94	Dukes' B	≥9	79.9	§	.028†
			<9	67		
Gumus, 2005 (23)	80	II	≥9	87	–	.353†
			<9	72‡		
	III	≥9	85			
		<9	55.7			
Berberoglu, 2004 (20)	301	II	≥9	78	2.8 (1.6 to 5.2)	<.001†
			<11	47		
			≥11	81		
Goldstein, 2002 (6)	745	II	≤7	62	–	.018†
			8–12	68		
			13–17	71		
			≥18	76		
Sarli, 2005 (7)	480	II	<10	51	1.50 (1.01 to 2.23)	<.045¶
			10–19	69		
			≥19	71		
Wong, 2002 (26)	173	II	11.3	–	–	<.001#
			22.6	–		
Ratto, 1999 (25)	487	I–II	11.4	83	–	.04**
			29.4	91		
		IIIA	58.9	.06		
			84.2			

Results

- 16 /17 studies → ↑ survival with numbers of LN in stage II colon ca
- 4/6 studies → ↑ survival with numbers of LN in stage III colon ca
- **Limitations**
 - Because all studies were observational and the quality and types of studies were heterogeneous, a causal relationship between the number of lymph nodes evaluated and survival could not be established



Conclusions

- The number of lymph nodes evaluated after surgical resection was positively associated with survival of patients with stage II and stage III colon cancer.
- The actual number of lymph node to be evaluated is still controversial.
- These results support consideration of the number of lymph nodes evaluated as a measure of the quality of colon cancer care.



Critical Appraisal of Systematic Review

- **Are the results of the review valid (效度如何)?**
 - What question did the systematic review address (回答什麼問題)?
 - Is it unlikely that important, relevant studies were missed (沒有遺漏重要的文獻)?
 - Were the criteria used to select articles for inclusion appropriate (選擇文獻的準則適當)?
 - Were the included studies sufficiently valid for the type of question asked (選擇的文獻有效回答所問的問題)?
 - Were the results similar from study to study (各研究的結果相似)?
- **What were the results (結果為何)?**
 - How are the results presented (結果如何呈現)?



What question did the systematic review addressed (PICO) 想要回答什麼問題

最理想狀況為何？

應清楚闡明文章想要回答的問題，暴露因子(包括治療、檢驗等)與結果的因果關係簡單明瞭

何處找到相關訊息？

題目、摘要或前言的末段應清楚描述所關心的問題。



Is it unlikely that important, relevant studies were missed 沒有遺漏重要的文獻

最理想狀況為何？

- 資料搜尋是否完整，包含
 - 重要的資料庫如Medline, Cochrane, EMBASE等
 - 相關研究的參考文獻
 - 向專家請教，特別是尚未刊載的研究
 - 不只限於英文資料
 - 搜尋策略包括MESH term及text words

何處找到相關訊息？

- “研究方法”詳細描述搜尋字彙與策略
- “研究結果”詳列回顧的題目、摘要、全文數目，排除的文章及排除理由，並以圖表或流程圖呈現



- Examination of at least **10 LNs** increase the yield of positive LNs and avoid under-staging of colorectal cancer. (Level IIb)

Kim J et al. *Am Surg.* 2006

- Harvesting and examining a minimum of **18 LNs** per surgical specimen might be taken into consideration for more reliable staging of LN-negative **T2–4N0M0** colorectal ca. (Level IIb)

~ Tsai HL et. al. *J Gastrointest Surg.* 2007

- We support the use the **12 LNs** indicator as a key element of our QI initiative in **stage II** colorectal ca. (Level V)

~ Wright FC et al., *J Surg Oncol.* 2009

- A higher number of examined nodes was associated with an increase in node positivity in **localized colon ca.** (Level IIb)

~ Kelder W et. al., *Dis Colon Rectum.* 2009

- The total number of LNs analyzed for **stage III** colon cancer is not a prognostic indicator of cancer-specific and disease-free survival. (Level Iib)

~ Tsikitis VL et. al, *J Am Coll Surg.* 2009



Were the criteria used to select articles for inclusion appropriate

選擇文獻的準則適當

最理想狀況為何？

事先清楚界定“收入”及“排除”文章的準則

準則的描述應包括病人群的特性、介入治療的方法或暴露因子、有興趣的研究結果

研究的類型及研究設計

何處找到相關訊息？

“研究方法”詳細描述

“收入”及“排除”文章的準則，通常亦包含研究的類型



Were the included studies sufficiently valid for the type of question asked

選擇的文獻有效回答所問的問題

最理想狀況為何？

應描述所回顧的每篇文章研究的品質

研究品質的判定準則依不同臨床問題而事先擬定的，如隨機分配、雙盲、追蹤的完整度等

何處找到相關訊息？

“研究方法”應描述品質的評估及所使用的準則

“研究結果”應說明各研究的品質



Were the results similar from study to study 各研究的結果相似

最理想狀況為何？

最理想的狀況是各研究的結論一致或差異不大

如果各研究的結果有差異，作者以統計的方法檢驗是否達到有統計意義的差別

探討各研究結論差異的原因

何處找到相關訊息？

“研究結果”應說明各研究的結果是否有差異，並討論可能的原因

“Forest plot”應顯示差異性的檢驗結果。



How are the results presented

結果如何呈現

- **Meta-analysis (統合分析)**
 - If the results of the individual studies are similar
 - Gives weighted values to each of the individual studies according to their size
 - The individual results of the studies expressed in a standard way, eg relative risk, odds ratio or mean difference between groups
 - Results are displayed in a figure called “forest plot”
- **Exploring heterogeneity (檢驗差異性)**
 - “Eyeball” test
 - Cochran chi-square (Cochran Q)
 - Definite heterogeneity (確定有差異)
 - Cochran Q ($P < 0.1$)
 - Possible heterogeneity (可能有差異)
 - Cochran Q is not statistically significant
 - Cochran Q / degrees of freedom (Q/df) > 1
 - Heterogeneity unlikely (有差異機會不大)
 - Cochran Q is not statistically significant
 - Q/df < 1

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

從期刊資料得知，針對colon cancer stage II/II的病人，當淋巴結取得越多，對於overall survival rate會有影響。
有時取得的mesentery量不多。

病人意願

無病人意願問題。

生活品質

適當對colon cancer做staging，對治療方式會有影響，也會影響到生活品質以及預後。

社會脈絡

無社會脈絡問題。

總結與討論

- 針對colon cancer stage II/II的病人，當淋巴結取得越多，對於overall survival rate會有影響。
- 盡量找尋淋巴結，若檢體本身mesentery不夠多而使得淋巴數量不足時，在報告上應詳細標示找尋數量/轉移顆數，以便臨床科醫師作為往後治療方向的參考。

Thanks for Your Attention !!



Lymph node evaluation as a colon cancer quality measure: a national hospital report card, Bilimoria KY et. al, *J Natl Cancer Inst.* 2008 Sep 17;100(18):1310-7. Epub 2008 Sep 9

- **METHODS:** From the National Cancer Data Base, 1296 hospitals that performed 156789 colectomies in 1996-1997 and 2004-2005 were identified, and rates of hospital-level compliance (≥ 12 nodes in $\geq 75\%$ of patients)
- **RESULTS:**
 - 1996-1997: 15%
 - 2004-2005: increased to 38%
- **CONCLUSIONS:** This study provides a national report card of nearly 1300 hospitals showing that more than 60% of institutions failed to achieve a compliance benchmark for the 12-node measure



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？是，可以作為預後參考。
- 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？否
- 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，屬於診斷範疇
- 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？否



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？是
- 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？尚可

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Number need to treat 的意義？了解
- 我是否了解Likelihood Ratios的意義？了解
- 我是否了解worksheet每一項的意義？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？**可**
- 我是否能將搜尋到的結論如NNT, LR用病人聽得懂的方式解釋給病人聽？**可**
- 當搜尋到的最佳證據與實際臨床作為不同時，我如何解釋？ **做適當的微調**



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**
- 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？**盡量多找尋淋巴數量**



效率評估

- 這篇報告，我總共花了多少時間？ **一週**
- 我是否覺得這個進行實證醫學的過程是值得的？ **值得，學會了應用 Mesh term 搜尋文章，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 及學校購買的 paper 尚不夠多，很多文章都不能看到全文**

