KEY QUESTION 5

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a. Wat is de meerwaarde van een stent of deviërend colostoma ten opzichte van acute resectie met of zonder primaire anastomose bij acute obstructie door een linkszijdig coloncarcinoom?

P: patiënten met een acute obstructie door een linkszijdig coloncarcinoom

I: stent of deviërend colostoma

C: acute resectie met of zonder primaire anastomose

O: mortaliteit, morbiditeit

2. SEARCH STRATEGY 5

Searches were run on November 29, 2012 for systematic reviews (SRs) and randomised controlled trials (RCTs). Pubmed Medline and the Cochrane Database of Systematic Reviews (CDSR) were searched. Detailed search strings are given below.

3. SEARCH RESULTS 5

SYSTEMATIC REVIEWS AND META-ANALYSES

The Medline search yielded 43 hits, while the search in the CDSR yielded no additional Cochrane reviews.

FULL-TEXT EVALUATION

43 records were screened on title and abstract. Of these 29 were excluded. The most important reasons for exclusion were that studies concerned other populations or evaluated other interventions or comparisons.

Of the remaining 14 studies, the full-text was retrieved. In addition, 1 article was retained through reference tracking. Table 1 provides an overview of the evaluation of these 15 studies.

Table 1. Key question 5: overview of reviews evaluated full-text.

	Reference	In-/Excluded	Reason(s)
1	Breitenstein, S., A. Rickenbacher, et al. (2007). "Systematic evaluation of surgical strategies for acute malignant left-sided colonic obstruction." Br J Surg **94**(12): 1451-1460.	In	Searched up to 2006
	Bridoux, V., L. Schwarz, et al. (2012). "Systematic review and meta-analysis of randomized clinical trials of self-expanding metallic stents as a bridge to surgery versus emergency surgery for malignant left-sided large bowel obstruction (Br J Surg 2012; 99: 469-476)." Br J Surg **99**(10): 1464; author reply 1464-1465.	Ex	Letter
	Cirocchi, R., E. Farinella, et al. (2012). "Safety and efficacy of endoscopic colonic stenting as a bridge to surgery in the management of intestinal obstruction due to left colon and rectal cancer: A systematic review and meta-analysis." Surg Oncol.	In	Searched up to December 2011
	Datye, A. and J. Hersh (2011). "Colonic perforation after	Ex	No quality assessment

	Reference	In-/Excluded	Reason(s)
	stent placement for malignant colorectal obstruction--causes and contributing factors." Minim Invasive Ther Allied Technol **20**(3): 133-140.		
5	De Salvo, G. L., C. Gava, et al. (2004). "Curative surgery for obstruction from primary left colorectal carcinoma: primary or staged resection?" Cochrane database of systematic reviews(2): CD002101	In	
	Dionigi, G., F. Villa, et al. (2007). "Colonic stenting for malignant disease: review of literature." Surg Oncol **16 Suppl 1**: S153-155.	Ex	No quality appraisal
	Hill, J., R. Gray, et al. (2012). "Systematic review and meta-analysis of randomized clinical trials of self-expanding metallic stents as a bridge to surgery versus emergency surgery for malignant left-sided large bowel obstruction (Br J Surg 2012; 99: 469-476)." Br J Surg **99**(10): 1462; author reply 1462-1463.	Ex	Letter
	Lamazza, A., E. Fiori, et al. (2012). "Self-expandable Metallic Stents in Patients with Stage IV Obstructing Colorectal Cancer." World J Surg **36**(12): 2931-2936.	Ex	Review of observational studies. No quality appraisal of included studies
	Qureshi, A., A. Verma, et al. (2010). "Colorectal cancer treatment." Clin Evid (Online) **2010**.	Ex	On other interventions
10	Sagar, J. (2011). "Colorectal stents for the management of malignant colonic obstructions." Cochrane Database Syst Rev(11): CD007378.	In	Searched up to May 2010
	Tan, C. J., B. V. Dasari, et al. (2012). "Systematic review and meta-analysis of randomized clinical trials of self-expanding metallic stents as a bridge to surgery versus emergency surgery for malignant left-sided large bowel obstruction." Br J Surg **99**(4): 469-476.	In	Searched up to 2011
	Tilney, H. S., R. E. Lovegrove, et al. (2007). "Comparison of colonic stenting and open surgery for malignant large bowel obstruction." Surg Endosc **21**(2): 225-233.	Ex	Performs meta-analyses of RCTs combined with observational studies
	Watt, A. M., I. G. Faragher, et al. (2007). "Self-expanding metallic stents for relieving malignant colorectal obstruction: a systematic review." Ann Surg **246**(1): 24-30.	In	Searched up to April 2005
	Ye, G. Y., Z. Cui, et al. (2012). "Colonic stenting vs emergent surgery for acute left-sided malignant colonic obstruction: A systematic review and meta-analysis." World J Gastroenterol 18(39): 5608-5615.	Ex	Performs meta-analyses of RCTs combined with observational studies
15	Zhang, Y., et al., Self-expanding metallic stent as a bridge to surgery versus emergency surgery for obstructive colorectal cancer: A meta-analysis. Surgical Endoscopy and Other Interventional Techniques, 2012. 26(1): p. 110-119.	Ex	Performs meta-analyses of RCTs combined with observational studies

RANDOMIZED CONTROLLED TRIALS

The Medline search yielded 390 hits.

FULL-TEXT EVALUATION

390 hits were screened on title and abstract. Of these, 383 were excluded. The most important reasons for exclusion were that studies were on other populations, interventions or comparisons.

Of the remaining 7 studies, the full-text was retrieved. Table 2 provides an overview of the evaluation of these studies.

Table 2. Key question 5: overview of RCTs evaluated full-text.

	Reference	In-/Excluded	Reason(s)
1	Cennamo, V., C. Luigiano, et al. (2012). "Meta-analysis of randomized trials comparing endoscopic stenting and surgical decompression for colorectal cancer obstruction." Int J Colorectal Dis.	In	Systematic review
	Cennamo, V., C. Luigiano, et al. (2012). "Colorectal stenting as a bridge to surgery reduces morbidity and mortality in left- sided malignant obstruction: a predictive risk score- based comparative study." Dig Liver Dis **44**(6): 508-14	Ex	Non-randomised study: ´ The choice between these two approaches was based on the presence or absence of an interventional endoscopist at the moment of the diagnosis´
	Fiori, E., A. Lamazza, et al. (2012). "Palliative management for patients with subacute obstruction and stage IV unresectable rectosigmoid cancer: colostomy versus endoscopic stenting: final results of a prospective randomized trial." Am J Surg **204**(3): 321-326	In	Follow-up of Fiori 20004
	Park, I. J., G. S. Choi, et al. (2009). "Comparison of one-stage managements of obstructing left- sided colon and rectal cancer: stent- aparoscopic approach vs. intraoperative colonic lavage." J Gastrointest Surg 13(5): 960-965	Ex	Non-randomised study
5	Ptok, H., F. Marusch, et al. (2006). "Incurable stenosing colorectal carcinoma: endoscopic stent implantation or palliative surgery?" World J Surg 30(8): 1481-1487	Ex	Non-randomised study
	Suarez, J., J. Jimenez, et al. (2010). "Stent or surgery for incurable obstructive colorectal cancer: an individualized decision." Int J Colorectal Dis 25(1): 91-96.	Ex	Non-randomised study: ´The decision whether to do surgery or to place a stent and about the type of surgery was made by the admitting surgeon or by the Digestive Oncology Committee of Hospital de Navarra´
7	van Hooft, J. E., W. A. Bemelman, et al. (2007). "Colonic stenting as bridge to surgery versus emergency surgery for management of acute left-sided malignant colonic obstruction: a multicenter randomized trial (Stent-in 2 study)." BMC Surg 7: 12	Ex	Study protocol of an included study (van Hooft 2011)

FURTHER CONSIDERATIONS

One SR (De Salvo 2004) compared a staged resection vs. immediate resection. One RCT (Kronborg 1995) was identified but excluded. We decided to include this RCT.

The nine included RCTs in the seven selected SRs on stents are depicted below. The wide variation of trials included is a bit confusing, apart from RCTs that might have been published after the last search date of the SR. Exclusion criteria were specified in two SRs only (Cirrochi 2011; Sagar 2011). Cirrochi et al. excluded studies that were closed prematurely. It was decided not to describe the six SRs, as exclusion criteria were not always described, and when described seemed invalid, but instead to retrieve the nine included RCTs and describe these. The SR by De Salvo et al was included as it examined staged resection vs. primary resection.

Table 3. Nine RCTs included in five SRs

SR / RCT	(Breitenstein 2007)	(Cennamo 2012)	(Cirocchi 2012)	(Sagar 2011)	(Tan 2012)	(Watt 2007)
(Alcantara, Serra-Aracil et al. 2011)	-	x	-	-	x	-
(Cheung, Chung et al. 2009)	-	x	-	x	x	-
(Fiori, Lamazza et al. 2004)	x	x	-	x	-	x
(Ho, Quah et al. 2012)	-	x	x	-	-	-
(Pirlet, Slim et al. 2011)	-	x	x	-	x	-
(Xinopoulos, Dimitroulopoulos et al. 2004)	-	x	-	-	-	x
(Sankararajah, Forshaw et al. 2005)	-	-	-	x	-	-
(van Hooft, Fockens et al. 2008)	-	x	-	x	-	-
(van Hooft, Bemelman et al. 2011)	-	x	x	x	x	-

Meta-analyses were performed using Comprehensive Meta-Analysis (CMA), using fixed effects analyses, or random effects analysis if $I^2 \geq 60$.

SEARCH STRINGS

4. MEDLINE, MEDLINE IN PROGRESS (VIA PUBMED)

Searched on November 29, 2012. Searches limited to studies published in English, from 2005 onwards. Searched combined with a filter for systematic reviews and subsequently with a filter for RCTs.

("Colonic Neoplasms"[Mesh] OR ((colorectal OR colon OR colonic OR (large AND bowel)) AND (cancer* OR carcinoma* OR adenocarcinoma* OR malignan* OR tumor* OR tumour* OR neoplasm*)) AND ("Intestinal Obstruction"[Mesh] OR obstructi* OR ileus)

SR filter (Hunt D, et al. Ann Intern Med 1997;126:532-538)

("meta-analysis" [pt] OR "meta-anal*" [tw] OR "metaanal*" [tw] OR ("quantitativ* review*" [tw] OR "quantitative* overview*" [tw]) OR ("systematic* review*" [tw] OR "systematic* overview*" [tw]) OR ("methodologic* review*" [tw] OR "methodologic* overview*" [tw]) OR ("review" [pt] AND "medline" [tw])

RCT filter (Cochrane Highly Sensitive Search Strategy for identifying randomized trials (2008)):

(randomized controlled trial [pt] OR controlled clinical trial [pt] OR randomized [tiab] OR placebo [tiab] OR drug therapy [sh] OR randomly [tiab] OR trial [tiab] OR groups [tiab]) NOT (animals[mh] NOT (animals[mh] AND humans [mh]))

5. CDSR (VIA THE COCHRANE LIBRARY)

The Cochrane Database of Systematic Reviews was browsed by topic:

a. cancer -> colorectal->surgery

REFERENCES

Alcantara, M., X. Serra-Aracil, et al. (2011). "Prospective, controlled, randomized study of intraoperative colonic lavage versus stent placement in obstructive left-sided colonic cancer." World journal of surgery **35**(8): 1904-1910.

Cheung, H. Y., C. C. Chung, et al. (2009). "Endolaparoscopic approach vs conventional open surgery in the treatment of obstructing left-sided colon cancer: a randomized controlled trial." Archives of surgery **144**(12): 1127-1132.

Fiori, E., A. Lamazza, et al. (2004). "Palliative management of malignant rectosigmoidal obstruction. Colostomy vs. endoscopic stenting. A randomized prospective trial." Anticancer research **24**(1): 265-268.

Ho, K. S., H. M. Quah, et al. (2012). "Endoscopic stenting and elective surgery versus emergency surgery for left-sided malignant colonic obstruction: a prospective randomized trial." International journal of colorectal disease **27**(3): 355-362.

Pirlet, I. A., K. Slim, et al. (2011). "Emergency preoperative stenting versus surgery for acute left-sided malignant colonic obstruction: a multicenter randomized controlled trial." Surgical endoscopy **25**(6): 1814-1821.

Sankararajah, D., M. Forshaw, et al. (2005). "Multicentre prospective randomized controlled trial of pre-operative endoluminal stenting vs. surgery in large bowel obstruction - interim analysis of short term outcomes." Colorectal Dis **7**(Suppl. 1): 45-143.

van Hooft, J. E., W. A. Bemelman, et al. (2011). "Colonic stenting versus emergency surgery for acute left-sided malignant colonic obstruction: a multicentre randomised trial." The lancet oncology **12**(4): 344-352.

van Hooft, J. E., P. Fockens, et al. (2008). "Early closure of a multicenter randomized clinical trial of endoscopic stenting versus surgery for stage IV left-sided colorectal cancer." Endoscopy **40**(3): 184-191.

Xinopoulos, D., D. Dimitroulopoulos, et al. (2004). "Stenting or stoma creation for patients with inoperable malignant colonic obstructions? Results of a study and cost-effectiveness analysis." Surgical endoscopy **18**(3): 421-426.