Appendices

Appendix 1. Full search strategy for articles on the effect of postoperative discontinuation of surgical antibiotic prophylaxis on the incidence of surgical site infection

Medline (through PubMed)	
Query #	Query
1.	surgical wound infection"[Mesh] OR surgical site infection*[tiab] OR SSI[tiab] OR SSIs[tiab] OR surgical wound infection*[tiab] OR surgical infection*[tiab] OR post-operative wound infection*[tiab] OR postoperative wound infection*[tiab]
2.	antibiotic prophylaxis"[Mesh] OR antimicrobial[tiab] OR antibiotic*[tiab]
3.	(prolong*[tiab] OR duration[tiab] OR short[tiab] OR long[tiab] OR single dose*[tiab] OR single dosage*[tiab] OR single dosis[tiab] OR singular dose*[tiab] OR singular dosage*[tiab] OR singular dosis[tiab] OR multi dose*[tiab] OR multi dosage*[tiab] OR multi dosis[tiab] OR multiple dose*[tiab] OR multiple dosage*[tiab] OR multiple dosis[tiab])
4.	trial[ti]) OR randomly[tiab]) OR clinical trial as topic[mesh:noexp]) OR placebo[tiab]) OR randomized[tiab]) OR controlled clinical trial[pt]) OR randomized controlled trial[pt]
5.	1 AND 2 AND 3 AND 4

EMBASE	
Query #	Query
1.	surgical infection/ or (SSI or SSIs).ti,ab,kw. or ((surg* or postoperat* or post-operat*) adj3 infect*).ti,ab,kw.
2.	antibiotic prophylaxis/ or (antimicrobial or antibiotic*).ti,ab,kw.
3.	exp drug dose/ or treatment duration/ or (prolong* or duration*).ti,ab,kw. or ((single or singular or multi*) adj3 (dose* or dosage* or dosis)).ti,ab,kw. or ((short* or long*) adj3 (duration* or course*)).ti,ab,kw.
4.	controlled clinical trial/ or randomized controlled trial/ or exp "clinical trial (topic)"/ or (randomly or randomized or placebo).ti,ab,kw. or trial.ti.
5.	1 and 2 and 3 and 4

Cochrane Central Register (CENTRAL)	
Query #	Query
1.	MeSH descriptor: [surgical wound infection] explode all trees
2.	SSI or SSIs:ti,ab,kw (word variations have been searched)
3.	(surg* or postoperat* or post-operat*) near/3 infect*:ti,ab,kw (word variations have been searched)
4.	#1 or #2 or #3
5.	MeSH descriptor: [antibiotic prophylaxis] explode all trees
6.	antimicrobial or antibiotic*:ti,ab,kw (word variations have been searched)
7.	#5 or #6
8.	prolong* or duration*:ti,ab,kw (word variations have been searched)
9.	(single or singular or multi*) near/3 (dose* or dosage* or dosis):ti,ab,kw (word variations have been searched)
10.	(short* or long*) near/3 (duration* or course*):ti,ab,kw (word variations have been searched)
11.	#8 or #9 or #10
12.	#4 and #7 and #11 in Trials

CINAHL (Ebsco)	
Query #	Query
1.	(MH "surgical wound infection") OR (TI (surgical site infection* OR SSI OR SSIs OR surgical wound infection* OR surgical infection* OR post-operative wound infection* OR postoperative wound infection*) OR AB (surgical site infection* OR SSI OR SSIs OR surgical wound infection* OR surgical infection* OR post-operative wound infection* OR postoperative wound infection*))
2.	MH "antibiotic prophylaxis") OR TI (antimicrobial OR antibiotic*) OR AB (antimicrobial OR antibiotic*)
3.	(MH "treatment duration") OR TI (prolong* OR duration OR short OR long OR single dose* OR single dosage* OR single doses OR singular dose* OR singular dosage* OR singular doses OR multi dose* OR multi dosage* OR multi doses OR multiple dose* OR multiple dosage* OR multiple doses) OR AB (prolong* OR duration OR short OR long OR single dose* OR single dosage* OR single doses OR singular dose* OR singular dosage* OR singular doses OR multi dose* OR multi dosage* OR multi doses OR multiple dose* OR multiple dosage* OR multiple doses)
4.	(MH "randomized controlled trials") OR (MH "clinical trials+") OR TI trial OR (TI controll* AND trial*) OR AB (TI controll* AND trial*) OR (TI (randomly OR placebo OR randomized) OR AB (randomly OR placebo OR randomized))
5.	S1 AND S2 AND S3 AND S4

WHO regional medical databases	
Query #	Query
1.	Filter subject descriptor: antibiotic prophylaxis
2.	(tw:(surgical site infection)) OR (tw:(wound infections)) OR (tw:(wound infection))

Appendix 2. Criteria for risk of bias assessment

Risk of bias domain	Criteria for judgment
Selection bias	Low risk of bias: A random component was used in the sequence generation process and allocation was concealed High risk of bias: A non-random component was used or allocation was inadequately concealed. Unclear: Sequence generation or allocation concealment was insufficiently described for judgement.
Performance bias	Low risk of bias: Blinding of patients and investigators was described (e.g. with a placebo control group) Hight risk of bias: There was no blinding of patients and investigators. Unclear: Blinding of participants and investigators was insufficiently described for judgement
Detection bias	Low risk of bias: Outcome assessor blinding was ensured High risk of bias: Outcome assessors were not blinded Unclear: Blinding of outcome assessors was insufficiently described.
Attrition bias	Low risk of bias: An intention to treat analysis was conducted or attrition was low or balanced and unlikely to have affected the outcome High risk of bias: Attrition was unbalanced or high relative to the event incidence and could have affected the outcome. Unclear: Attrition was insufficiently described
Reporting bias	Low risk of bias: No outcomes mentioned in the study registration or protocol where omitted or altered. High risk of bias: Outcomes mentioned in the study registration or protocol where omitted or altered. Unclear: No registration or protocol was available
Other bias	Low risk of bias, unless other concerns existed on the validity of the study

Appendix 3. Studies excluded after full text review

	Author, year	Reason for exclusion
1.	Kumar 2013[1]	Incomparable regimen
2.	Ahn 2013[2]	Not an RCT
3.	Fonseca 2006[3]	Incomparable regimen
4.	Sevin 2007[4]	Not an RCT
5.	Han 2014[5]	Not an RCT
6.	Farran 2008[6]	Did not address study question
7.	Schardey 1997[7]	Did not address study question
8.	Vu 2014[8]	Not an RCT
9.	Basoli 2008[9]	Did not address study question
10.	Safdar 1992[10]	Incomparable regimen
11.	Gidiri 2014[11]	Incomparable regimen
12.	Kato 2007[12]	Incomparable regimen
13.	Dahl A 2006[13]	Not an RCT
14.	Kakimaru 2010[14]	Not an RCT
15.	Kato 2006[15]	Not an RCT
16.	Pedrini 2005[16]	Not an RCT
17.	Righi 1995[17]	Duplicate of Righi 1996
18.	Adde 2012[18]	Incomparable regimen
19.	Luaces 2010[19]	Incomparable regimen
20.	Lacasa 2007[20]	Incomparable regimen
21.	Jensen 1990[21]	Incomparable regimen
22.	Boffi 1992[22]	Duplicate of Gazzaniga 1992
23.	Gazzaniga 1992[23]	Incomparable regimen
24.	Mathur 2013[24]	Incomparable regimen
25.	Kaczmarzyk 2007[25]	Did not address study question
26.	Vargas-Mena 2012[26]	Not an RCT
27.	Wu 1998[27]	Did not address study question
28.	Ahmadi 2005[28]	Did not address study question
29.	Morimoto 1998[29]	Did not address study question
30.	Morimoto 1993[30]	Not retrievable
31.	Hashizume 2004[31]	Incomparable regimen
32.	Bonzanini 1993[32]	Did not address study question
33.	Fukushima 2014[33]	Congress abstract
34.	Badia 2011[34]	Congress abstract
35.	Hashimoto 2014[35]	Congress abstract
36.	Ijarotimi 2013[36]	Not retrievable
37.	Shakya 2010[37]	Not retrievable
38.	Ko 2010[38]	Not retrievable
39.	Rajshekhar 2009[39]	Congress abstract
40.	Patacchiola 2000[40]	Did not address study question
41.	Urbanetz 1994[41]	Not retrievable
42.	Cartana 1990[42]	Not retrievable
43.	Ali 2006[43]	Congress abstract
44.	Ricart-Hoffiz 2011[44]	Congress abstract
45.	Rolle 1990[45]	Not retrievable
46.	Orlando 2010[46]	Congress abstract
47.	Navarro 1995[47]	Did not address study question
48.	Lee 2012[48]	Not retrievable
49.	Cheshani 2015[49]	Not retrievable
50.	Ali 2012[50]	Not retrievable
51.	Seker 2011[51]	Not retrievable
52.	Bencini 1994[52]	Not retrievable
53.	Lindeboom 2005[53]	Did not address study question
54.	Marcucci 1990[54]	Not retrievable
55.	Shahid 2007[55]	Did not address study question
56.	Cuthbertson 1991[56]	Did not address study question
57.	Akgur 1992[57]	Did not address study question
58.	Garcia 2017[58]	Did not address study question
59.	Ghosh 2017[59]	Congress abstract

60.	Habibi 2016[60]	Congress abstract
61.	Phillips 2016[61]	Congress abstract
62.	Samson 2017[62]	Congress abstract
63.	Chen 2018[63]	Not retrievable
64.	Yalagachin 2018[64]	Did not address study question

Appendix 4. Study characteristics of the included studies for all five comparisons

Author, Year	Country, design, participants	Mean age,% female	Type of surgery	Wound class.	CDC SSI definition, Follow-up	Intervention	Control		
Comparison 1: Postoperative continuation of surgical antibiotic prophylaxis vs. postoperative discontinuation of surgical antibiotic prophylaxis									
Sadraei-Moosavi 2017[65]	Iran, Single centre 152*	28, NA	Appendectomy (open, uncomplicated)	II-III	No[z], NR	1g Ceftriaxone & 0·5g Metronidazole IV preoperatively + 24h postoperatively	1g Ceftriaxone & 0·5g Metronidazole IV preoperatively	No	Yes
Hussain 2012[66]	Saudi Arabia, Single centre 377	32, 46%	Appendectomy (open, uncomplicated)	II-III	No[a], 30 days	Cefuroxime & Metronidazole IV preoperatively + 1x postoperatively	Cefuroxime & Metronidazole IV preoperatively	Yes	Yes
Liberman 1995[67]	United States of America, Single centre 99*	26, 17%	Appendectomy (open uncomplicated)	II-III	No[a], 3 weeks	2g Cefoxitin IV preoperatively + 3x q 6h postoperatively	2g Cefoxitin IV preoperatively	Yes	Yes
Tsang 1992[68]	Hong Kong, Single centre 103†	8, 30%	Appendectomy (open, uncomplicated)	II-III	No[a], 4 weeks	1·5 mg/kg Gentamicin IV & 7·5 mg/kg Metronidazole IV preoperatively +2x q 8h postoperatively	1·5 mg/kg Gentamicin IV & 7·5 mg/kg Metronidazole IV preoperatively	No	Yes
Suzuki 2011[69]	Japan, Single centre 370	66, 45%	Colorectal surgery	II-III	No[f], 30 days	1g Flomoxef IV preoperatively + 4x q 12h	1g Flomoxef IV preoperatively	Yes	Yes
Fujita 2007[70]	Japan, Multi centre 377	61, 38%	Colorectal surgery	II-III	No[d], NR	1g Cefmetazole IV preoperatively + 2x q 8h	1g Cefmetazole IV preoperatively	Yes	No
Imamura 2012[71]	Japan, Multi centre 355	65, 32%	Upper GI surgery	II	CDC, 30 days	1g of Cefazolin IV preoperatively +1 x direct postoperative & 4x q 12h postoperative	1g of Cefazolin IV preoperatively	No	Yes
Haga 2012[72]	Japan, Single centre 325	68, 28%	Upper GI surgery	II	CDC, 30 days	1g of Cefazolin IV preoperatively + 5x q 12h postoperatively	1g of Cefazolin IV preoperatively	No	Yes
Balbo 1991[73]	Italy, Multi centre 117	62, 44%	Upper GI surgery	II-III	No[v], 30 days	2g Mezlocillin IV preoperatively + 2x q 6h postoperatively	2g Mezlocillin iv preoperatively	Yes	Yes
Mohri 2007[74]	Japan, Multi centre 486	68, 28%	Upper GI surgery	II	CDC, 6 weeks	1g Cefazolin IV or 1·5 g Ampicillin sulbactam IV preoperatively + 7x q 12h postoperatively	1g Cefazolin IV or 1·5 g Ampicillin sulbactam IV preoperatively	Yes	Yes
Chauhan 2018[75]	India, Single centre 210*	42, 81%	Laparoscopic Cholecystectomy	II-III	No[d], 30 days	1g Ceftriaxone IV preoperatively + 4x q 12h postoperatively	1g Ceftriaxone IV preoperatively	No	No
Santibañes 2018[76]	Argentina, Single centre 201	50, 47%	Laparoscopic Cholecystectomy	II-III	No[d], 30 days	Ampicillin sulbactam IV q 6h preoperatively (admission – surgery, < 5 days) + 1g Amoxicillin/Clavulanic acid PO 15x q 8h	Ampicillin sulbactam IV q 6h preoperatively (admission until surgery, < 5 days) + 1g Placebo PO 15x q 8h	No	No
Kim 2017[77]	South Korea, Multi centre 188	59, 62%	Laparoscopic Cholecystectomy	II-III	Yes, 30 days	1g Cefoxitin IV preoperatively + q 8h IV or PO if tolerated until POD 3	1g Cefoxitin IV preoperatively + placebo q 8h IV or PO if tolerated until POD 3	Yes	Yes
Loozen 2017[78]	The Netherlands, Single centre 150	53, 53%	Laparoscopic Cholecystectomy	II-III	No[u]	2g Cefazolin IV preoperatively + 0·75g Cefazoline IV & 0·5g Metronidazole IV 9x q 8h	2g Cefazolin IV preoperatively	Yes	Yes
Regimbeau 2014[79]	France, Multi centre 414	55, 51%	Open or laparoscopic Cholecystectomy	II-III	CDC, 30 days	2g Amoxycillin clavulanate IV 3dd before surgery & preoperatively + 15x q 8h IV or PO if tolerated	2g Amoxycillin clavulanate IV 3dd before surgery & preoperatively	Yes	No
Unemura 2000[80]	Japan, Multi centre 242	52, 50%	Laparoscopic cholecystectomy	II-III	No[a], NR	2g of either Flomoxef or Cefotiam or Cefazolin or	2g of either Flomoxef or Cefotiam or Cefazolin or	No	Yes

						Cefmetazole or Fosfomycn case of an allergy IV preoperatively + 4x q 12h postoperatively	Cefmetazole or Fosfomycn in case of an allergy IV preoperatively		
Meijer 1993[81]	The Netherlands, Multi centre 1004	65, 69%	Hepatobiliary surgery	II	No[i], 4-6 weeks	1·5g Cefuroxime IV preoperatively + 0·75g Cefuroxime IV 2x q 8h postoperatively	1·5g Cefuroxime IV preoperatively	No	No
Abro 2014[82]	Pakistan, Single centre 208	35, 53%	Mixed general surgery	I-III	No[j], 35 days	2g Ceftriaxone IV preoperatively + 1g Ceftriaxone IV 2x q 8h postoperatively (& 0·25g Gentamicin & 0·5g Metronidazole when indicated)	2g Ceftriaxone IV preoperatively (& 0·25g Gentamicin & 0·5g Metronidazole when indicated)	No	Yes
Becker 2008[83]	Israel, Single centre 44	65, 31%	Mixed general surgery	I	CDC, 30 days	1g Cefazolin IV preoperatively + 3dd postoperatively until drains were removed	1g Cefazolin IV preoperatively	Yes	Yes
Scher 1997[84]	United States of America, Single centre 768	NA, NA	Mixed general surgery	II	No[d], NR	1g of Cefazolin IV preoperatively + 1g Cefazolin IV 3x q 8h postoperatively	1g of Cefazolin IV preoperatively	Yes	Yes
Kow 1995[85]	Australia, Single centre 1010*	NA, 50%	Mixed general surgery	II-III	No[b], 4-6 weeks	2g Cefoxitin IV & 0·5 Metronidazole IV preoperatively + 2x q 6h postoperatively	2g Cefoxitin IV & 0·5g Metronidazole IV preoperatively	No	No
						1g Cefotaxime IV & 0·5g metronidazole IV preoperatively + 2x q 6h postoperatively	1g Cefotaxime IV & 0·5g metronidazole IV preoperatively		
Turano 1992[86]	Italy, Single centre 3567*	45, NA	Abdominal, Gynaecological and Urological surgery	II-III	No[a], 7 days	1g Cefotaxime IV preoperatively + 2x q 6h after the first dose	1g Cefotaxime IV preoperatively	Yes	Yes
Bates 1992[87]	The United Kingdom, Multi centre 900*	55, 58%	Mixed general surgery	II-IV	No[b], 30 days	0·25g/0·125g Amoxicillin/clavulanic acid IV preoperatively + 2x q 8h postoperatively	0·25g/0·125g Amoxicillin/clavulanic acid IV preoperatively	Yes	No
Aberg 1991[88]	Sweden, Single centre 428*	NA, NA	Mixed general surgery	II-III	No[a], 30 days	1·5g Cefuroxime IV preoperatively + 2x q 8h (& 0·5g metronidazole when indicated)	1·5g Cefuroxime IV preoperatively (& 0·5g metronidazole when indicated)	No	No
Sgroi 1990[89]	Italy, Single centre 352	54, 46%	Mixed general	II-III	No[a], NR	1 x Cephalosporin§ preoperatively + 2x q 8h postoperatively	1 x Cephalosporin§ preoperatively	Yes	No
Westen 2015[90]	Tanzania, Multi centre 176	26, 100%	C-section	II	No[k], 30 days	1g Ampicillin IV & 0·5g Metronidazole IV preoperatively + 0·5 Ampicillin & 0·5g Metronidazole IV 2x q 8h postoperatively followed by 0·5g Amoxicillin PO and 0·4g metronidazole PO 9x q 8h	1g Ampicillin IV & 0·5g Metronidazole IV preoperatively	Yes	Yes
Shaheen 2014[91]	Pakistan, Single centre 100	29, 100%	C-section	II	No[l], 6 weeks	1g Cefotaxime IV preoperatively + 2 x q 12h postoperatively followed by 0·4g Cefuroxime PO for 5 days	1g Cefotaxime IV preoperatively	Yes	Yes
Lyimo 2013[92]	Tanzania, Single centre 500	NA, 100%	C-section	II	CDC, 30 days	3 mg/kg Gentamicin IV & 0·5g Metronidazole I + preoperatively Metronidazole 0·5g 3x q 8h postoperatively	3 mg/kg Gentamicin IV & 0·5g Metronidazole IV preoperatively	Yes	Yes

Su 2005[93]	Taiwan, Single centre 532	46, 100%	Gynaecological surgery	II	No[m], 90 days	1g Cefazolin preoperatively + 3x q 6h postoperatively	1g Cefazolin IV preoperatively	Yes	Yes
Irato 1997[94]	Italy, Single centre 84	49 ,NA	Gynaecological surgery	II-III	No[w], NR	2g cefotetan IV preoperatively + 10x q 12h	2g cefotetan IV preoperatively	Yes	No
Cartaña 1994[95]	Spain, Single centre 58	50, 100%	Gynaecological surgery	II	No[d], 4 days	4g Piperacillin preoperatively + 2x q 6h postoperatively	4g Piperacillin IV preoperatively	Yes	No
Buckley 1990[96]	Canada, Single centre 204	77, 74%	Orthopaedic / trauma surgery	I	No[a], 6 weeks	2g Cefazolin IV preoperatively + 1g Cefazolin 3x q 6h postoperatively	2g Cefazolin IV preoperatively	Yes	Yes
Garotta 1991[97]	Italy, Multi centre 614	58, 54%	Orthopaedic / trauma surgery	I	No[c], 1 year	2g Ceftizoxime IV preoperatively + 1x q 12h postoperatively	2g Ceftizoxime IV preoperatively	Yes	No
Hellbusch 2008[98]	United States of America, Multi centre 233	NA, 56%	Orthopaedic / trauma surgery	I	No[o], >21 days	1g<100kg<2g Cefazolin IV preoperatively + 9x q 8h postoperatively followed by 0·5g Cephalexin PO 28x q 6h	1g<100kg<2g Cefazolin IV preoperatively	Yes	Yes
Crist 2018[99]	United States of America, Single centre 227	49, 50%	Orthopaedic / trauma surgery	I	No[x]	1g<100kg<2g Cefazolin IV preoperatively + 2x q 8h postoperatively	1g<100kg<2g Cefazolin IV preoperatively + 2x q 8h Saline	Yes	Yes
Nooyen 1994[100]	The Netherlands, Single centre 844	33-86, 86%	Cardiothoracic surgery	I	No[c], NR	20mg/kg Cefuroxime IV preoperatively + 0·75g Cefuroxime IV 9x q 8h postoperatively	20mg/kg Cefuroxime IV preoperatively	Yes	No
Tamayo 2008[101]	Spain, Single centre 838	68, 38%	Cardiothoracic surgery	I	CDC, 12 months	2g Cefazolin IV preoperativel + 1g Cefazolin IV 2x q 8h postoperatively	2g Cefazolin IV preoperatively	No	Yes
Olak 1991[102]	The United Kingdom, Single centre 199	63, 29%	Cardiothoracic surgery	II	No[a], 6 weeks	2g Cefazolin IV preoperatively + 1g Cefazolin IV 5x q 8h postoperatively	2g Cefazolin IV preoperatively	No	Yes
Jiang 2004[103]	China, Multi centre 264	55, 22%	Thoracic surgery	II-III	CDC, 30 days	1·5g cefuroxime IV preoperatively + 15x 0·75g q 8h postoperatively	1·5g cefuroxime IV preoperatively	No	No
Hall 1998[104]	Australia, Single centre 302	70, 28%	Vascular surgery	I	No[c], 42 days	3·0g/0·1g Ticarcillin Clavulanic acid IV preoperatively + q 6h postoperatively until lines were removed	3·0g/0·1g Ticarcillin Clavulanic acid IV preoperatively	No	Yes
Orlando 2015[105]	Italy, Multi centre 205	48, 39%	Transplant surgery	I	CDC, 30 days	2g Cefazolin IV or 1g Cefotaxime IV preoperatively + q 12h postoperatively until removal of Foley catheter	2g Cefazolin IV or 1g Cefotaxime IV preoperatively	Yes	Yes
Maier 1992[106]	Germany, Single centre 106	NA,NA	Head and neck surgery	I-II	No[d], NR	1·5 g Cefuroxime IV preoperatively + 2x q 8h postoperatively	1·5 g Cefuroxime IV preoperatively	Yes	No
Mann 1990[107]	Germany, Single centre 113	53, 31%	Head and neck surgery	II	No[a], NR	2g Cefotiam IV & 0·5g Metronidazole IV preoperatively + 2x q 8h postoperatively	2g Cefotiam IV & 0·5g Metronidazole IV preoperatively	Yes	Yes
Rajan 2005[108]	Australia, Single centre 200	33, 44%	Head and neck surgery	II	No[d], 30 days	2·2g Amoxicillin / clavulanic acid IV preoperatively + 1g Amoxicillin/ clavulanic acid PO 14x q 12h postoperatively	2·2g Amoxicillin / clavulanic acid IV preoperatively	Yes	No
Campos 2015[109]	Brazil, Single centre 74	NA, 16%	Maxillofacial surgery	I-II	No[e], 6 weeks	2g Cefazolin IV preoperatively + 1g Cefazolin IV 4x q 6h postoperatively	2g Cefazolin IV preoperatively	Yes	Yes
Lindeboom 2003[110]	The Netherlands,	30, 74%	Maxillofacial surgery	II	No[s], 3 months	0·4g Clindamycin IV preoperatively +	0·4g Clindamycin IV preoperatively	Yes	Yes

	Single centre 70					Clindamycin IV 4x q 6h postoperatively			
Cioaca 2002[111]	Romania, Single centre 140*	45, 32% 48, 43%	Maxillofacial surgery	II	No[a], 14 days	2·4 mg Amoxicillin/ Clavulanic acid IV preoperatively + 15x q 8h postoperatively 2g Cefazolin IV preoperatively + 15x q 8h postoperatively	2·4 mg Amoxicillin/ Clavulanic acid IV preoperatively 2g Cefazolin IV preoperatively	No	No
Wahab 2013[112]	India, Single centre 60*	27, 48%	Maxillofacial surgery	II	CDC, 2 months	1g Amoxicillin IV preoperatively + 0·5g Amoxicillin IV 2x q 4h postoperatively	1g Amoxicillin IV preoperatively	No	No
Danda 2010[113]	India, Single centre 150*	24, 62%	Maxillofacial surgery	II	No[b], 4 weeks	1g Ampicillin IV preoperatively + Ampicillin 0·5g IV 4x q 6h postoperatively	1g Ampicillin IV preoperatively	No	No
Kang 2009[114]	South Korea, Single centre 56	24, 46%	Maxillofacial surgery	II	CDC, 2 weeks	1g Cefpiramide IV preoperatively + 6x q 12h postoperatively	1g Cefpiramide IV preoperatively	Yes	Yes
Rajabi 2012[115]	Iran, Single centre 291*	26, 38%	Appendectomy (open, uncomplicated)	II-III	No[a], 10 days after discharge	1g Ceftriaxone IV & 0·5g Metronidazole IV preoperatively + 1g Ceftriaxone IV q 12h & 0·5g Metronidazole IV q 8h For 1 OR 3 days postoperatively	1g Ceftriaxone IV & 0·5g Metronidazole IV preoperatively	No	Yes
Mui 2005[116]	Hong Kong, Single centre 269*	34, 30%	Appendectomy (open, uncomplicated)	II-III	No[a], 30 days	1·5g Cefuroxime IV & 0·5 g Metronidazole IV preoperatively + 2x postoperatively OR a 5-day course IV until PO was tolerated (Cefuroxime 0·25g 2dd + metronidazole 0·4g 3dd)	1·5g Cefuroxime IV & 0·5 g Metronidazole IV preoperatively	Yes	Yes
Comparison 2: Postoperative continuation of surgical antibiotic prophylaxis for multiple postoperative doses <24h vs. postoperative continuation of surgical antibiotic prophylaxis for one postoperative dose									
Karran 1993[117]	The United Kingdom, Single centre 227	67, 51%	Colorectal surgery	II-III	No[g], 6-8 weeks	1g Imipenem IV preoperatively + 1x 3h postoperatively followed by 0·5 Imipenem IV 2x q 8 h	1g Imipenem IV preoperatively + 1x 3h postoperatively	No	No
Comparison 3: Postoperative continuation of surgical antibiotic prophylaxis > 24h vs postoperative continuation of surgical antibiotic prophylaxis <= 24h									
Rajabi 2012[115]	Iran, Single centre 194*	26, 39%	Appendectomy (open, uncomplicated)	II-III	No[a], 10 days after discharge	1·5g Cefuroxime IV & 0·5 g Metronidazole IV preoperatively + 1g Ceftriaxone 6x q 12h & 0·5g Metronidazole IV q 9x q 8h postoperatively	1·5g Cefuroxime IV & 0·5 g Metronidazole IV preoperatively + 1g Ceftriaxone 2x q 12h & 0·5g Metronidazole IV 3x q 8h postoperatively	No	Yes
Mui 2005[116]	Hong Kong, Single centre177*	34, 32%	Appendectomy (open, uncomplicated)	II-III	No[a], 30 days	1·5g Cefuroxime IV & 0·5 g Metronidazole IV preoperatively + 5-day course IV until PO was tolerated (Cefuroxime 250mg 2dd + metronidazole 400mg 3dd)	1·5g Cefuroxime IV & 0·5 g Metronidazole IV preoperatively + 2x for 1 day postoperatively	Yes	Yes
Ishibashi 2014[118]	Japan, Single centre 297	65,36%	Colorectal surgery	II-III	CDC, 30 days	1g Flomoxef IV + 1x 1h postoperatively followed by 4x q 12h	1g Flomoxef IV + 1x 1h postoperatively	No	Yes
Ishibashi 2009[119]	Japan, Single centre 275	68,42%	Colorectal surgery	II-III	CDC, 30 days	1g Cefotiam IV or Cefmetazole IV + 1x 1h postoperatively followed by 4 x q 12h	1g Cefotiam IV or 1g Cefmetazole IV + 1x 1h postoperatively	No	Yes
McArdle 1995[120]	United Kingdom,	61, 55%	Colorectal surgery	II-III	No[a], 4 weeks	0·5g Metronidazole IV & 0·12g Gentamicin	0·5g Metronidazole IV & 0·12g Gentamicin	Yes	Yes

	Single centre 169				after discharge	IV + 0·5g Metronidazole IV & 0·08g Gentamicin 9x q 8h	IV+ 0·5g Metronidazole IV & 0·08g gentamicin IV 2x q 8h		
Becker 1991[121]	United States of America, Single centre 40	33, 48%	Colorectal surgery	II-III	No[b], 56 days	2g Cefoxitin IV preoperatively + 2x q 6h after the initial dose followed by 1g Cefoxitin IV 20x q 6h postoperatively	2g Cefoxitin IV preoperatively + 2x q 6h after the initial dose	Yes	No
Fujita 2015[122]	Japan, Single centre 257	68, 13%	Upper GI surgery	II	CDC, 30d	1g Cefmetazole IV 4x q 3h starting preoperatively + 4x q 12h postoperatively	1g Cefmetazole IV 4x q 3h starting preoperatively	Yes	Yes
Lau 1990[123]	Hong Kong, Single centre 203	60, 66%	Open cholecystectomy	II-III	No[h], 1 year	2g Cefamandole IV preoperatively + 0·5g Cefamandole IV 28x q 6h after the initial dose	2g Cefamandole IV preoperatively + 0·5g Cefamandole IV 2x q 6h after the initial dose	Yes	No
Yang 2001[124]	China, Multi centre 731	49, 51%	Mixed general	II-III	No[d], NR	0·3g Netilmicine IV & 0·5g metronidazole IV when needed + 9x q 8h postoperatively	0·3g Netilmicine IV & 0·5g metronidazole IV when needed + 2x q 8h postoperatively	Yes	No
Bozorgzadeh 1999[125]	United States of America, Single centre 300*	27, 13%	Mixed general surgery	II-III	CDC, 30 days	1g Cefoxitin IV for 24 with the first dose given in the emergency department after determination of the requirement for laparotomy + 20x q 6h	1g Cefoxitin IV for 24 with the first dose given in the emergency department after determination of the requirement for laparotomy + 4x q 6h	No	No
Hanif 2015[126]	India, Single centre 220*	‡, 47%	Mixed general surgery	II-III	No[d], NR	1g Sulbactam IV & 0·5 g Cefoperazone IV preoperatively + 15x q 8h	1g Sulbactam IV & 0·5 g Cefoperazone IV preoperatively + 2x q 8h	Yes	No
Chang 2005[127]	Taiwan, Single centre 156	42, 100%	Gynaecological surgery	II	No[o], 7 days after discharge	2g Cephalothin IV & 0·08g Gentamicin IV preoperatively + 1g Cephalothin IV 5-10x q 6h & 0·06-0·08g Gentamicin IV 4-8x q 8h postoperatively	2g Cephalothin IV & 0·08g Gentamicin IV preoperatively + 1g Cephalothin IV 4x q 6h & 0·06-0·08g Gentamicin IV 3x q 8h postoperatively	Yes	No
Takemoto 2015[128]	United States of America, Single centre 314	58, 55%	Orthopaedic / trauma surgery	I	CDC, 1 year	Cefazolin for drain duration starting preoperatively (average of 3·2 days)	Cefazolin for 24h starting preoperatively	Yes	Yes
Lin 2011[129]	Taiwan, Single centre 231	57, 17%	Cardiothoracic surgery	I	CDC, 30 days	1 gr Cefazolin preoperatively + 9x q 8h postoperatively	1 gr Cefazolin preoperatively + 3x q 8h postoperatively	No	Yes
Niederhauser 1997[130]	Switzerland, Single centre 53	65, 21%	Cardiothoracic surgery	I	CDC, 3-540 days	1g of cefazolin preoperatively + 2x q 8h postoperatively followed by Ticarcillin/clavunate 5·2g 6x q 8h & 0·5g Vancomycin q 12h until removal of IABP	1g of cefazolin preoperatively + 2x q 8h postoperatively	Yes	Yes
Liu 2008[131]	Taiwan, Single centre 53	57, 17%	Head and neck surgery	II	CDC, 30 days	0·3g Clindamycin IV preoperatively +12x q 6h postoperatively	0·3g Clindamycin IV preoperatively + 4x q 6h postoperatively	Yes	Yes
Carroll 2003[132]	United States of America, Single centre 74	62, 38%	Head and neck surgery	II	No[p], 7 days	0·9g Clindamycin IV preoperatively +15x q 8h after the initial dose	0·9g Clindamycin IV preoperatively + 3x q 8h after the initial dose	Yes	Yes
Righi 1996[133]	Italy, Single centre 162	64, 12%	Head and neck surgery	II	No[s], 20 days	0·6g Clindamycin IV & Cefonicid 1g IV preoperatively + 0·6g Clindamycin IV 9x q 8h & Cefonicid 1g 3x q 12h postoperatively	0·6g Clindamycin IV & Cefonicid 1g IV preoperatively + 0·6g Clindamycin IV 3x q 8h & Cefonicid 1g 1x q 12h postoperatively	Yes	No
Bidkar 2014[134]	India, Single centre 78*	29, 58%	Head and neck surgery	I-III	No[d], 3 weeks	1·5g Cefuroxime preoperatively + 0·75g Cefuroxime 2x q 12h	1·5g Cefuroxime Preoperatively + 0·75g	Yes	Yes

						postoperatively followed by 0·2g Cefixime PO 16x q 12h	Cefuroxime 2x q 12h postoperatively		
Abubaker 2001[135]	United States of America, Single centre 30	32, 10%	Maxillofacial surgery	II	No[c], 6 weeks	2m U aqueous Penicillin-G IV q 4h from admission trough the preoperative and intraoperative phase and for 12h postoperatively followed by 0·5g penicillin PO 20x q 6h	2m U aqueous Penicillin-G IV q 4h from admission trough the preoperative and intraoperative phase and for 12h postoperatively	Yes	Yes
Eshghpour 2014[136]	Iran, Single centre 50*	27, 66%	Maxillofacial surgery	II	No[d], 6 weeks	1g Cefazolin IV preoperatively + 1x q 4h after the initial dose followed by 0·5g Amoxicillin PO 21x q 8h	1g Cefazolin IV preoperatively + 1x q 4h after the initial dose	Yes	Yes
Jansisyanont 2008[137]	Thailand, Multi centre 122*	26, 67% 27, 67%	Maxillofacial surgery	II	CDC, 6 weeks	1·2g Amoxicillin / Clavulanic acid + 0·625g Amoxicillin / clavulanic acid PO 15x q 8h postoperatively	1·2g Amoxicillin / Clavulanic acid preoperatively + 1x q 8h postoperatively	Yes	Yes
						2 million units of aqueous Penicillin IV + 0·5g Amoxicillin PO 15x q 8h postoperatively	2m U of aqueous Penicillin IV preoperatively + 1x q 4h postoperatively		
Baqain 2004[138]	The United Kingdom, Single centre 34	27, 68%	Maxillofacial surgery	II	No[t], 6 weeks	1g Amoxicillin IV + 0·5g Amoxicillin IV 1x q 3h postoperatively followed by 0·5g Amoxicillin 15x q 8h	1g Amoxicillin IV + 0·5g Amoxicillin IV 1x q 3h postoperatively	No	No
Bentley 1999[139]	Canada, Single centre 30	NA,NA	Maxillofacial surgery	II	CDC, 30 days	2m U aqueous Penicillin-G IV preoperatively + 1x q 3h postoperatively after the last intraoperative dose followed by 1m U Penicillin-G IV 8x q 6h followed by 0·3g penicillin-V PO 8x q 6h	2m U aqueous Penicillin-G IV preoperatively + 1x q 3h postoperatively after the last intraoperative dose	No	Yes
Fridrich 1994[140]	United States of America, Single centre 30*	27, 47%	Maxillofacial surgery	II	No[d], 8 weeks	2m U Penicillin IV preoperatively + q 4h until IV discontinuation on postoperative day 1 followed by 0·5g Penicillin VK 28x q 6h	2m U Penicillin IV preoperatively + a 2h until participants reached the recovery room, where the final dose was given	Yes	Yes
Comparison 4: Postoperative continuation of surgical antibiotic prophylaxis > 48h vs postoperative continuation of surgical antibiotic prophylaxis <= 48h									
Togo 2007[141]	Japan, Single centre 180	62, 36%	Hepatobiliary surgery	II	CDC, 30 days	1g Flomoxef IV preoperatively + 1x postoperatively followed by 2g Flomoxef IV 10x q 12h	1g Flomoxef IV preoperatively + 1x postoperatively followed by 2g Flomoxef IV 4x q 12h	Yes	Yes
Sugawara 2018[142]	Japan, Single centre 86	70, 29%	Hepatobiliary surgery	II-III	CDC, 30 days	Cefazoline IV (or in case of a positive culture, as culture indicated) preoperatively + 12x q8h	Cefazoline IV (or in case of a positive culture, as culture indicated) preoperatively + 6x q8h	Yes	Yes
Gupta 2010[143]	India, Single centre 227	54, 19%	Cardiothoracic surgery	I	CDC, 30 days	Ceftazidime Pentahydrate IV & Amikacin IV preoperatively + for 72h postoperatively	Ceftazidime Pentahydrate IV & Amikacin IV preoperatively + for 48h postoperatively	Yes	Yes

Otani 2004[144]	Japan, Single centre 40	49, 43%	Thoracic surgery	II-III	No[d], 14 days	1g Cefmetazole IV preoperatively + 1x directly postoperatively followed by 12 x q 12h	1g Cefmetazole IV preoperatively + 1x directly followed by 2 x q 12h	No	No
Sawyer 1990[145]	United States of America, Multi centre 50	62, 24%	Head and neck surgery	II	No[s], NR	1g Cefazolin IV & 0·5g Metronidazole IV preoperatively + 1g Cefazolin IV 21x q 8h & 0·5g Metronidazole IV 28x q 6 h postoperatively	1g Cefazolin IV & 0·5g Metronidazole IV preoperatively + 1g Cefazolin IV 6x q 8h & 0·5g Metronidazole IV 8x q 6 h postoperatively	No	Yes
Davis 2017[146]	Canada, Single centre 171*	25, 74%	Maxillofacial surgery	II	CDC, 30 days / 1 year	2g Cefazolin IV preoperatively + 3x q 8h postoperatively followed by 0·5g Cephalexin PO & 0·3g Clindamycin PO 8x q 6h	2g Cefazolin IV preoperatively + 3x q 8h postoperatively	Yes	Yes
Comparison 5: Postoperative continuation of surgical antibiotic prophylaxis > 72h vs postoperative continuation of surgical antibiotic prophylaxis <= 72h									
Park 2010[147]	South Korea, Multi centre 255	58, 38%	Colorectal surgery	II-III	CDC, 21 days	1g Cefotetan IV preoperatively + 15x q 8h postoperatively	1g Cefotetan IV preoperatively + 9x q 8h postoperatively	Yes	Yes

CDC: Center for Disease Control and Prevention; SSI: Surgical Site infection; Wound class.: CDC Wound Classification; 🕐: Timing of preoperative intravenous antibiotic specified and within 60 min prior to incision; 🔄: Repeat of surgical antibiotic prophylaxis administration specified when Indicated; *: Included paediatric patients; †: exclusively paediatric patients; No[letter]: SSI definition deviating from CDC classification. Letter refers to specification in the appendix, pp 12; IV: intravenous; H: Hour; x: times/frequency; q: per/interval; g: gram; NR: not recorded; SSI: surgical site infection; IABP: intra-aortic balloon pumping; <: less than; >: more than; <= less than or equal to; >=more than or equal to; POD: Postoperative day; NA: Not Available; ‡: 75% of the patients is < 40 years; § Various (unspecified) cephalosporins with medium to long halftimes were used

Appendix 5. SSI definitions deviating from the CDC definition

a	Purulent discharge with or without culture
b	Purulent discharge, or serous with a positive culture
c	Discharge with a positive culture
d	Wound infection, not otherwise specified
e	Pus drainage at the fracture site or in the vicinity of the surgical intervention site; b) increased swelling 7 days after the operation; c) presence of a fistula in the area of the surgical intervention or at the site of the fracture, with active drainage; d) other clinical features observed by the evaluator, including typical signs of infection such as fever, oedema and localized redness.
f	Purulent discharge or abscess
g	Purulent discharge, positive bacteriological culture, abscess, peritonitis, septicaemia
h	Purulent discharge, serous discharge + positive bacteriological cultures, serous discharge after the patient had returned home. Intra-peritoneal abscess was diagnosed by ultrasonic evidence of an abscess and by laparotomy
i	0: No sign of infection., 1: Minor infection (erythema, stitch abscess or skin edge necrosis)., 2: Major infection (purulent discharge or wound dehiscence).
j	Pain at the operative site, persistent fever >38°C wound erythema, tenderness, wound discharge and dehiscence.
k	Presence of erythema, purulent discharge, cellulitis or wound abscess, peritonitis, pelvic abscess or wound dehiscence.
l	Superficial or deep infection, pus discharge, abscess formation, wound dehiscence, and hematoma formation
m	Abdominal wound infection or trocar wound infection (including wound discharge or abscess). Pelvic abscess or tuba-ovarian abscess. Vaginal cuff abscess. Postoperative septicaemia.
n	Pelvic cellulitis, vaginal cuff abscess, pelvic abscess, wound infection
o	If the wound appeared red or oedematous or if there was drainage.
p	A wound was considered infected if the colour became red or the wound was swollen. A pink wound that developed purulent discharge was also considered infected.
q	Purulent drainage (either spontaneously or by incision) or muco-cutaneous fistula interpreted as wound infection.
r	Major wound infection was defined as wound breakdown and undermining of tissues sufficient to allow packing of the wound. Lesser complications, such as cellulitis or a tiny fistula, allowing only entry of a cotton-tipped applicator were considered as minor.
s	Presence of purulent drainage (either spontaneously or by incision), accompanied by pain or tenderness, localized swelling, redness, and heat or fever (>38·5° C) or an increase in localized swelling after an initial postoperative decrease of oedema, together with pain, discomfort, induration, and an increase in body temperature (>38·5° C).
t	The need for additional antibiotics
u	Wound infection Erythema of incision(s), pus and/or turbid fluid. Intra-abdominal abscess
v	Purulent discharge, endoperitoneal abscess or diffuse peritonitis but not secondary to anastomotic leakage
w	Infiltrate, dehiscence or Purulent secretion of the wound.
x	Purulent drainage at the operative site with the presence of one or more of the classic signs and symptoms of inflammation (rubor, calor, tumor, dolor)
z	Pus discharge from the wound, redness, tenderness and oedema. Intra-abdominal collection was defined as fluid collection inside the peritoneal cavity confirmed by ultrasound or CT

Appendix 6. Results of the exploratory subgroup analysis by surgical subspecialty

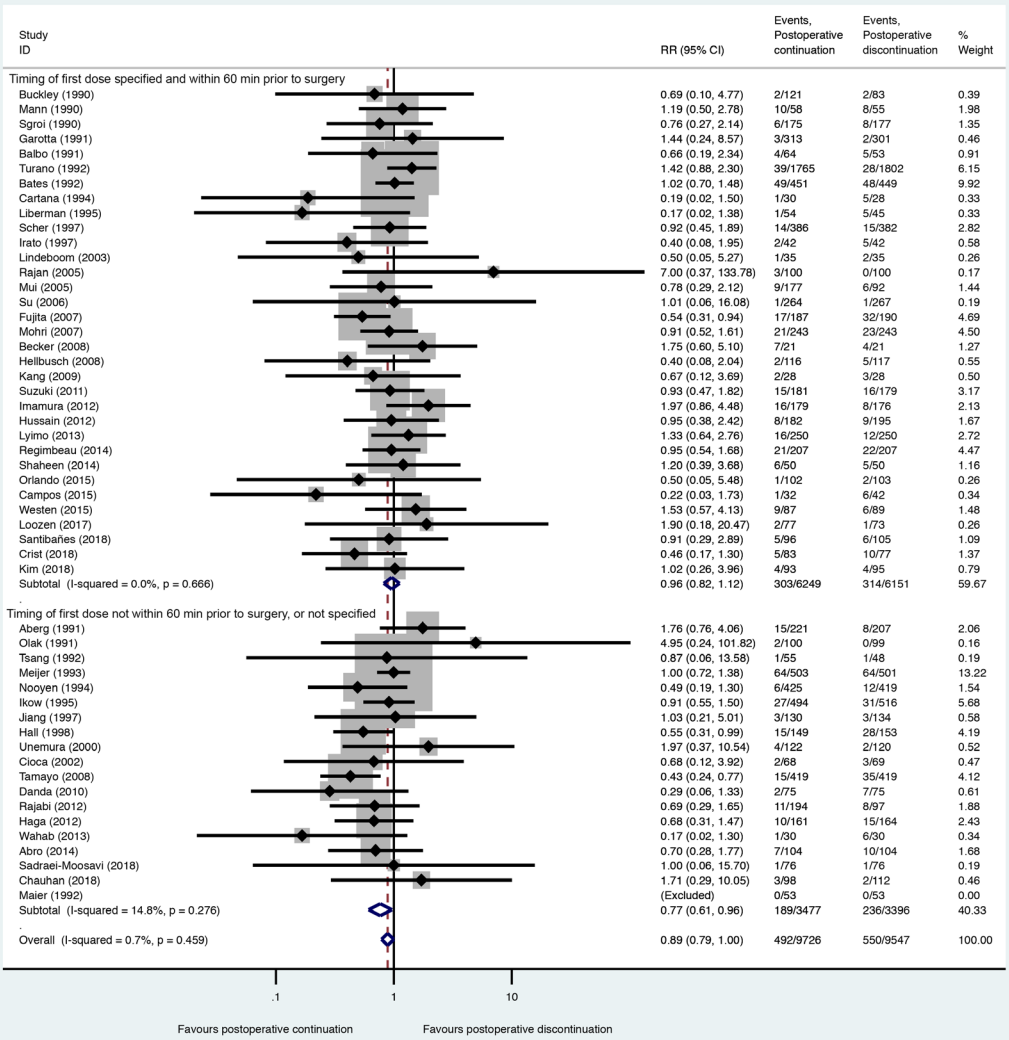
Explanatory variable	SG	N	SSI in longer regimen	SSI shorter regimen	Relative risk (95%CI)	tau^2_{MA}	tau^2_{MR}	P-Value for subgroup differences	% of heterogeneity variance explained
Overall analyses									
Overall analysis	A	52	492 of 9,726	549 of 9,547	0·89 (0·79, 1·00)	0·001	NA	NA	NA
Optimal regimen	B	24	196 of 4,648	186 of 4,552	1·04 (0·85, 1·27)	0·000	NA	NA	NA
Subgroup analyses									
Maxillofacial surgery	A	6	9 of 268	27 of 279	0·38 (0·18, 0·80)	0·000	0·000	0·025	100
	B	3	4 of 95	11 of 105	0·44 (0·14, 1·39)	0·000	0·000	0·137	0
Cardiac surgery	A	2	21 of 844	47 of 838	0·45 (0·27, 0·74)	0·000	0·000	0·006	100
	B	0	NA	NA	NA	NA	NA	NA	NA
Vascular Surgery	A	1	15 of 149	28 of 153	0·55 (0·31, 0·99)	0·000	0·000	0·102	100
	B	0	NA	NA	NA	NA	NA	NA	NA
Appendectomy	A	6	31 of 738	30 of 553	0·74 (0·44, 1·22)	0·000	0·003	0·458	0
	B	3	18 of 413	20 of 332	0·73 (0·36, 1·47)	0·047	0·000	0·285	0
Colorectal surgery	A	2	32 of 368	48 of 269	0·68 (0·40, 1·15)	0·048	0·000	0·182	100
	B	1	15 of 181	16 of 179	0·93 (0·47, 1·82)	0·000	0·000	0·725	0
Upper GI surgery	A	4	51 of 647	51 of 636	0·98 (0·62, 1·54)	0·058	0·004	0·612	0
	B	3	41 of 486	36 of 472	1·11 (0·63, 1·97)	0·087	0·000	0·812	0
Chole-cystectomy	A	6	39 of 693	37 of 712	1·06 (0·67, 1·64)	0·000	0·002	0·392	0
	B	2	6 of 170	5 of 168	1·19 (0·37, 3·87)	0·000	0·000	0·822	0
Hepatobiliary Surgery	A	1	64 of 503	64 of 501	1·00 (0·72, 1·38)	0·000	0·003	0·470	0
	B	0	NA	NA	NA	NA	NA	NA	NA
Mixed general surgery	A	8	164 of 3617	152 of 3658	1·08 (0·87, 1·34)	0·000	0·000	0·029	100
	B	3	60 of 2172	47 of 2205	1·30 (0·89, 1·88)	0·000	0·000	0·174	0
Caesarean section	A	3	31 of 387	23 of 389	1·35 (0·81, 2·28)	0·000	0·000	0·101	100
	B	3	31 of 387	23 of 389	1·35 (0·81, 2·28)	0·000	0·000	0·281	0
Gynaecological surgery	A	3	4 of 336	11 of 337	0·37 (0·12, 1·17)	0·000	0·000	0·136	100

	B	1	1 of 264	1 of 267	1·01 (0·06, 16·08)	0·000	0·000	0·984	0
Ortho/Trauma surgery	A	4	12 of 633	19 of 578	0·57 (0·28, 1·19)	0·000	0·000	0·233	100
	B	3	9 of 320	17 of 277	0·48 (0·22, 1·06)	0·000	0·000	0·047	0
Thoracic surgery	A	2	5 of 230	3 of 233	1·44 (0·36, 5·87)	0·000	0·003	0·492	0
	B	0	NA	NA	NA	NA	NA	NA	NA
Head and neck surgery	A	3	13 of 211	8 of 208	1·65 (0·41, 6·69)	0·436	0·001	0·302	29
	B	1	10 of 58	8 of 55	1·19 (0·50, 2·78)	0·000	0·000	0·758	0
Transplantation surgery	A	1	1 of 102	2 of 203	0·50 (0·05, 5·48)	0·000	0·004	0·645	0
	B	1	1 of 102	2 of 203	0·50 (0·05, 5·48)	0·000	0·000	0·551	0

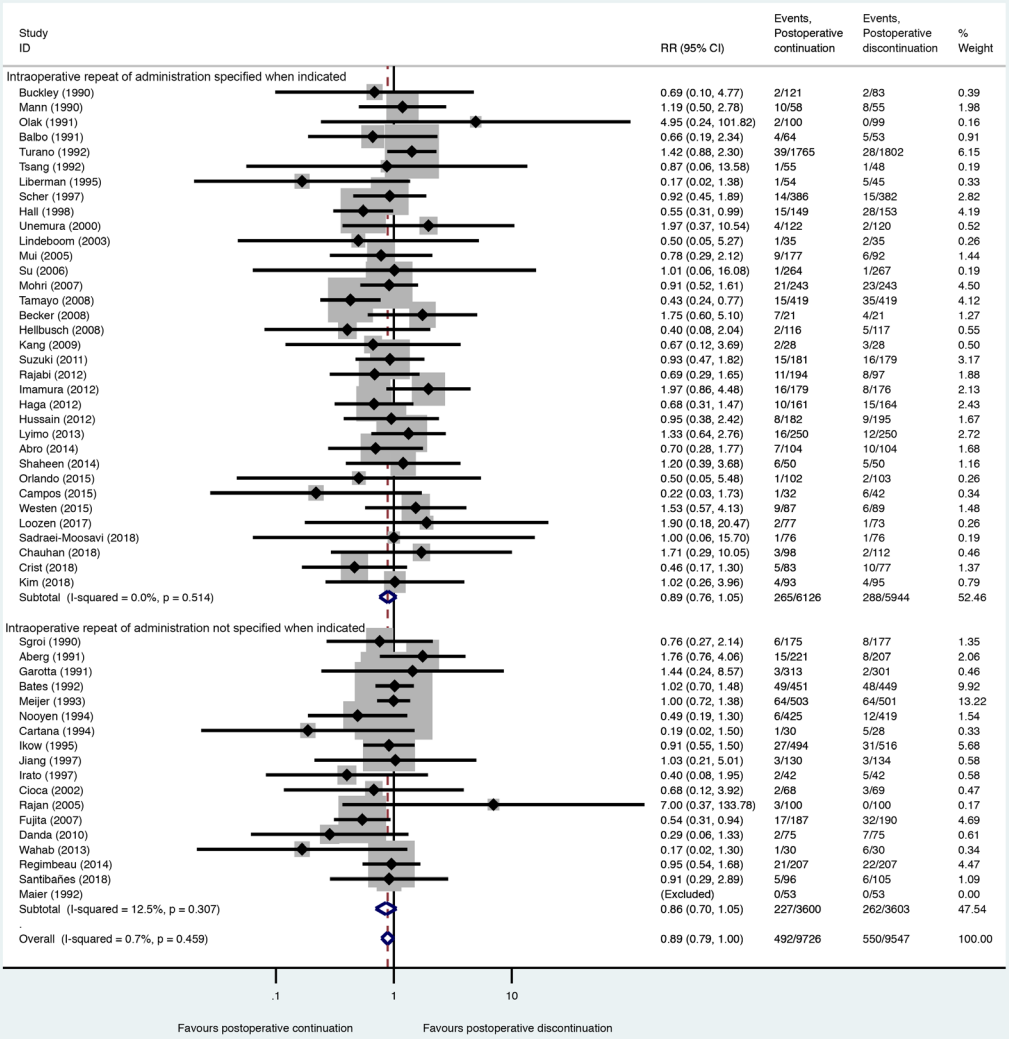
SG: Subgroup, A: Overall analysis, B: Subgroup; Adherence to current best practice standards of SAP, N: Number of studies, SSI: Surgical site infection, 95%CI: 95% confidence interval, NA: Not available, tau^2: Tau-squared, MR: Meta-regression, MA: Meta-analysis, % of heterogeneity variance explained: $\left(\frac{\tau^2{}_{MA(overal)} - \tau^2{}_{MR.}}{\tau^2{}_{MA\,(overal)}}\right)$

Appendix 7. Forest plots

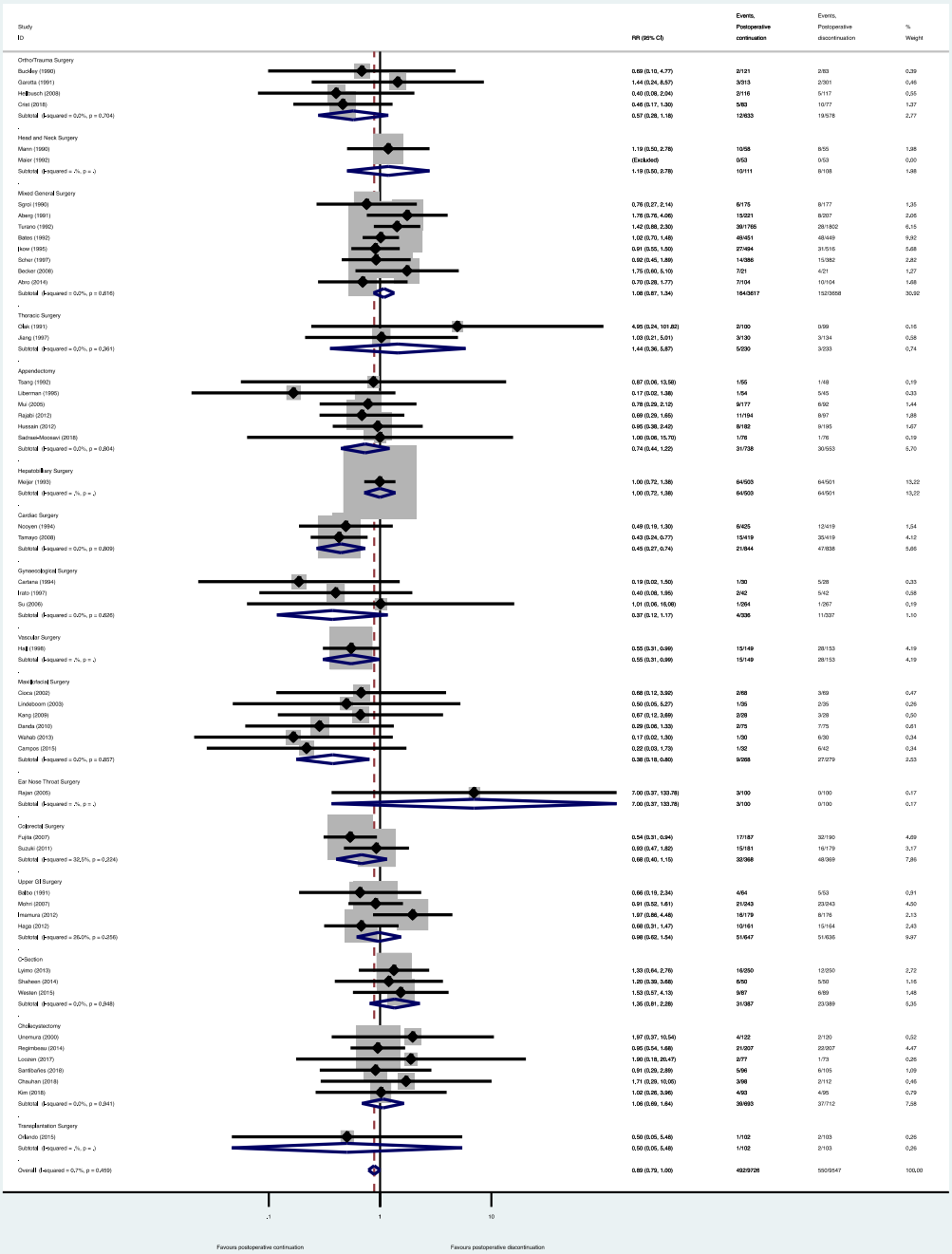
Appendix 7a. Forest plot: Postoperative continuation of surgical antibiotic prophylaxis vs. postoperative discontinuation of surgical antibiotic prophylaxis. Subgroup analysis: *Timing of first dose specified and within 60 min prior to surgery*



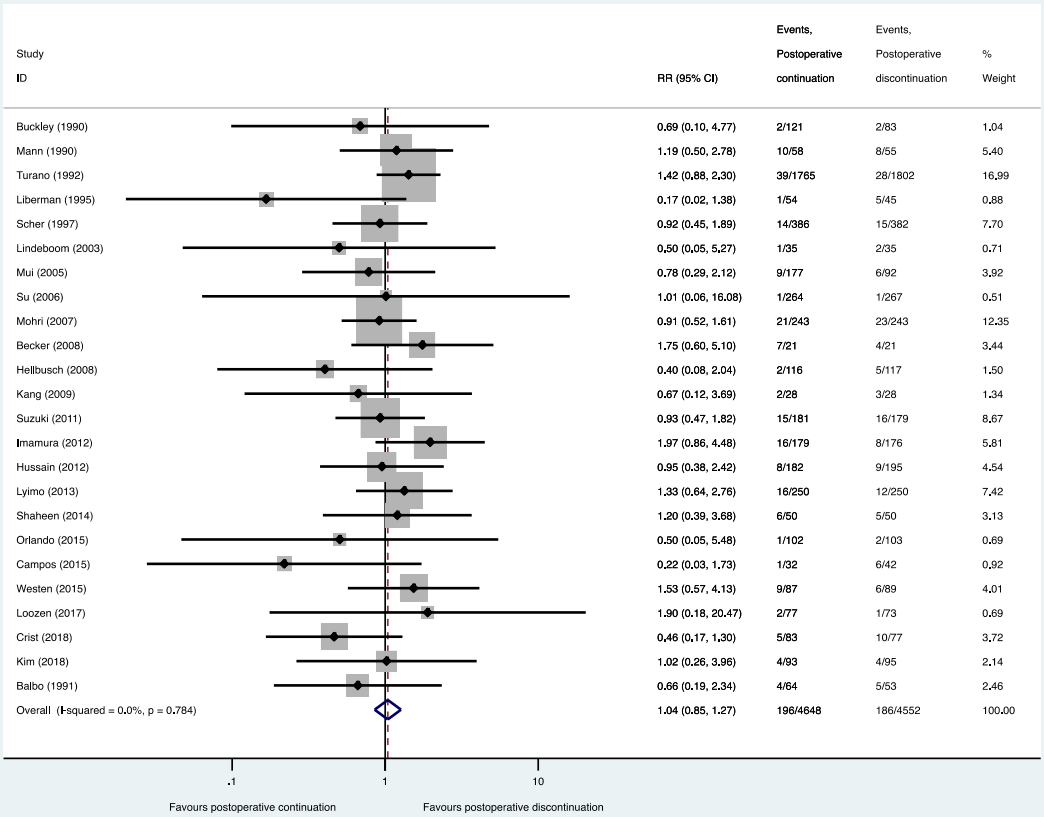
Appendix 7b. Forest plot: Postoperative continuation of surgical antibiotic prophylaxis vs. postoperative discontinuation of surgical antibiotic prophylaxis. Subgroup analysis: ***Intraoperative repeat of administration specified when indicated***



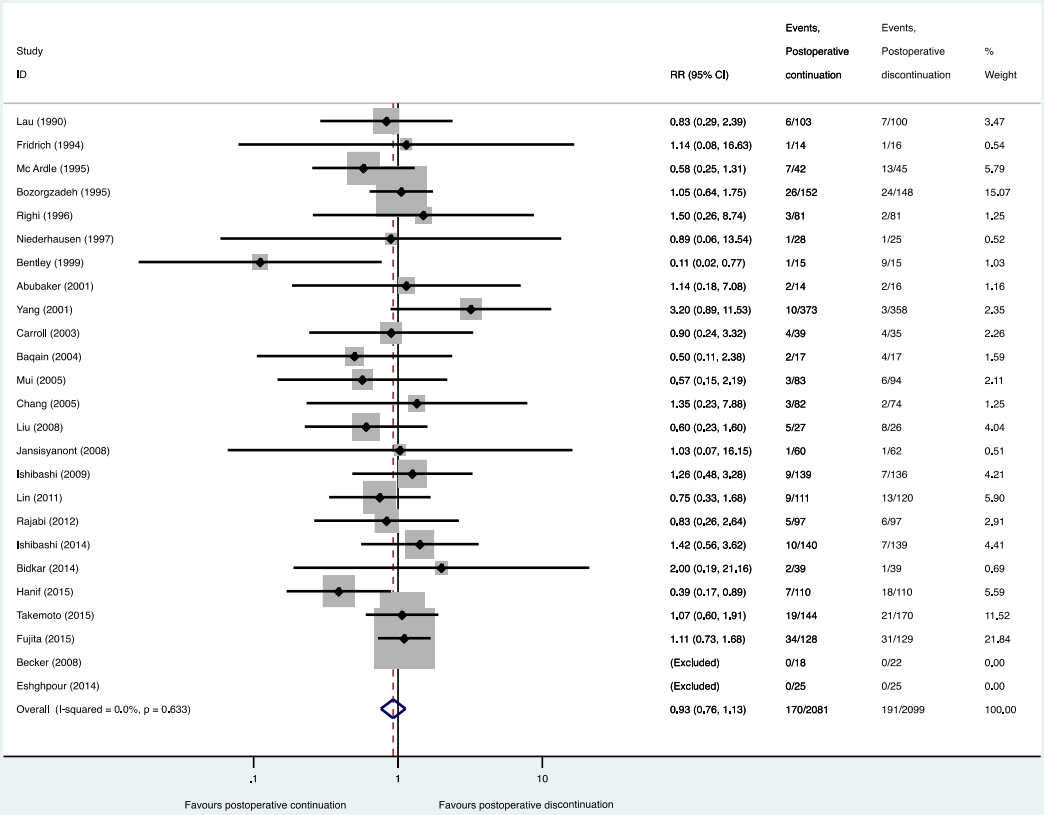
Appendix 7c. Forest plot: Postoperative continuation of surgical antibiotic prophylaxis vs. postoperative discontinuation of surgical antibiotic prophylaxis. Stratified analysis: Procedure type



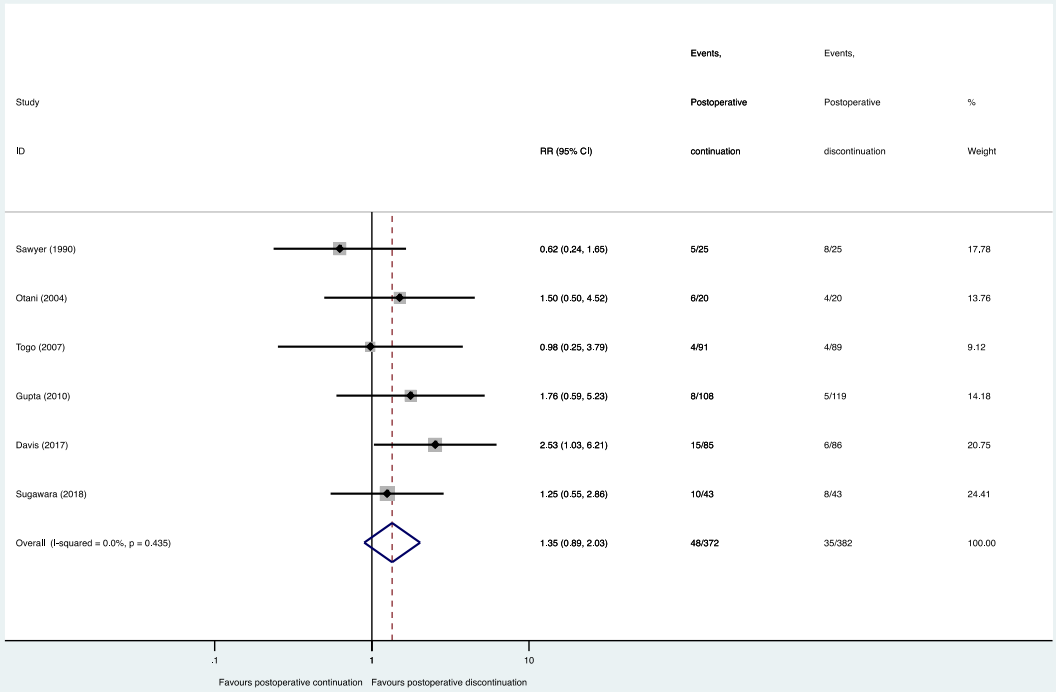
Appendix 7d. Forest plot: Postoperative continuation of surgical antibiotic prophylaxis vs. postoperative discontinuation of surgical antibiotic prophylaxis. Stratified analysis: Procedure type – restricted to studies with optimal regimen.



Appendix 7e. Forest plot: Postoperative continuation of SAP > 24h vs postoperative continuation of SAP <= 24h.



Appendix 7f. Forest plot: Postoperative continuation of surgical antibiotic prophylaxis > 48h vs postoperative continuation of surgical antibiotic prophylaxis <= 48h



Appendix 8. Studies reporting adverse events related to SAP

Study	Adverse event definition	Longer postoperative regimens	Shorter postoperative regimens
Mui 2005[116] ¶	*Clostridium difficile* confirmed by fecal clostridium toxin	5 of 177	0 of 92
Karran 1993[117] †	Hypotension, phlebitis, rash, erythema	5 of 114	1 of 113
Turano 1992[86] *	Thrombophlebitis, allergic reaction and gastrointestinal disturbances	40 of 1517	10 of 1700
Bidkar 2014[134] ‡	Gastrointestinal disturbances	19 of 39	1 of 39
Rajan 2005[108] *	Nausea, diarrhea, skin rash, pruritus	29 of 100	2 of 100
de Santibanes 2018[76] *	Unspecified	4 of 96	3 of 105
Liu 2008[131] ‡	No adverse events attributable to antibiotic use in both the intervention and control group.		
Carrol 2003[132] ‡	No adverse events attributable to antibiotic use in both the intervention and control group.		
Righi 1996[133] ‡	No adverse events attributable to antibiotic use in both the intervention and control group.		
Maier 1992[106] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Sawyer 1990[145] §	No adverse events attributable to antibiotic use in both the intervention and control group.		
Kang 2009[114] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Lindeboom 2003[110] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Suzuki 2011[69] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Fujita 2015[122] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Imamura 2012[71] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Mohri 2007[74] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Regimbeau 2007[79] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Becker 2008[83] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Cartana 1994[95] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Eshghpour 2014[136] ‡	No adverse events attributable to antibiotic use in both the intervention and control group.		
Loozen 2017[78] *	No adverse events attributable to antibiotic use in both the intervention and control group.		
Rajabi 2012[115] ¶	No adverse events attributable to antibiotic use in both the intervention and control group.		
Danda 2010[113] *	No adverse events attributable to antibiotic use in both the intervention and control group.		

* Postoperative continuation *vs* immediate discontinuation of SAP; † Postoperative continuation for 24 h *vs* a single dose after surgery; ‡ Postoperative continuation for >24 h *vs* ≤ 24 h; § Postoperative continuation for >48 h *vs* ≤ 48 h; ¶ Postoperative continuation *vs* immediate discontinuation of SAP and Postoperative continuation for >24 h *vs* ≤ 24 h;

Appendix 9. Studies reporting costs of SAP continuation

Study	Cost included	Cost postoperative continuation	Cost postoperative discontinuation	Absolute difference	Relative difference
Liberman 1995[67] *	Antibiotics	$ 54.80	$ 17.90	+ $ 36,90	3.06
Su 2005[93] *	Antibiotics	$ 48,00	$ 3.50	+ $ 44,50	13.71
Chang 2005[127] †	Total costs	$ 1,768.00	$ 1,728.00	+ $ 40,00	1.02
Orlando 2015[105] *	Antibiotics	$ 38.80	$ 3.88	+ $ 34,92	10,00
Rajan 2005[108] *	Total costs	$ 93.45	$ 14.50	+ $ 78,95	6,44
* Postoperative continuation *vs* immediate discontinuation of SAP; † Postoperative continuation for >24 h *vs* ≤ 24 h					

Appendix 10. Risk of bias evaluation of the included studies

Author, Year	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Sadraei-Moosavi 2018[65]	Unclear	Unclear	Unclear	Unclear	Unclear	Low	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	All predefined outcomes reported	No concerns
Hussain 2012[66]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Liberman 1995[67]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Tsang 1992[68]	High	High	High	Unclear	Unclear	Unclear	Low
Support for judgement	Randomized according to hospital numbers (even –odd)	Randomized according to hospital numbers (even –odd)	No blinding described and no allocation concealment	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Suzuki 2011[69]	Low	Unclear	Unclear	Unclear	Low	Unclear	Low
Support for judgement	Random number table	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Missing data balanced in numbers across intervention groups for similar reasons	No protocol or registration	No concerns
Fujita 2007[70]	Low	Low	High	High	Low	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not blinded	Not blinded	Low attrition, unlikely to influence outcome	No protocol or registration	No concerns
Imamura 2012[71]	Low	Low	High	High	Low	Low	Low
Support for judgement	Mersenne twister randomisation	Central randomisation	Not blinded	Not blinded	Intention to treat analysis	All predefined outcomes reported	No concerns
Haga 2012[72]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Balbo 1991[73]	Unclear	High	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Based on a randomisation list	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Mohri 2007[74]	Low	Low	Low	Low	Low	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Blinded investigators and patients	Independent outcome assessor	Balanced in reason and groups, unlikely to affect outcome	No protocol or registration	No concerns
Chauhan 2018[75]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgment	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Santibañes 2018[76]	Low	Low	Low	Low	Low	Low	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Blinded investigators and patients	Blinded investigators and patients	Intention to treat analysis	All predefined outcomes reported	No concerns
Kim 2017[77]	Low	Low	Low	Low	Low	Low	Low
Support for judgement	Computer randomisation	Central allocation by	Blinded investigators and patients	Blinded investigators and patients	Missing outcomes balanced in	All predefined outcomes reported	No concerns

		independent investigator			reason and groups		
Loozen 2017[78]	Low	Low	High	Unclear	Low	Low	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not blinded	Not (sufficiently) described	Missing outcomes balanced in reason and groups	All predefined outcomes reported	No concerns
Regimbeau 2014[79]	Low	Low	Unclear	Low	Low	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation based	Not (sufficiently) described	Blinded outcome assessor	Intention to treat analysis	No protocol or registration	No concerns
Unemura 2000[80]	High	High	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Randomized by alternately selecting treatment allocation	Randomized by alternately selecting treatment allocation	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Meijer 1993[81]	Low	Low	Low	Low	Low	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Blinded investigators and patients	Blinded outcome assessor	Intention to treat analysis	No protocol or registration	No concerns
Abro 2014[82]	Unclear	Unclear	Unclear	Unclear	High	Unclear	Low
Support for judgement	Not (sufficiently) described)	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Becker 2008[83]	Low	Unclear	Low	Unclear	Unclear	Unclear	Low
Support for judgement	Drawing of envelopes	Not (sufficiently) described	Randomisation after procedure	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Scher 1997[84]	Low	Low	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Central randomisation by random number chart*	Central randomisation by random number chart *	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Kow 1995[85]	Unclear	Unclear	High	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not blinded	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Turano 1992[86]	Unclear	High	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Open randomisation	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Bates 1992[87]	Low	Unclear	Unclear	Low	Low	Unclear	Low
Support for judgement	Randomized by random number table	Not (sufficiently) described	Not (sufficiently) described	Blinded outcome assessor	Attrition low and balanced. Unlikely to affect outcome	No protocol or registration	No concerns
Aberg 1991[88]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Sgroi 1990[89]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Westen 2015[90]	Unclear	Low	Unclear	Low	Low	Low	Low
Support for judgement	Not (sufficiently) described	Sequentially numbered, opaque, sealed envelopes	Not (sufficiently) described	Blinded outcome assessor	Intention to treat analysis	All predefined outcomes reported	No concerns
Shaheen 2014[91]	Low	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Shuffled cards	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Lyimo 2013[92]	Low	Unclear	High	High	Low	Unclear	Low
Support for judgement	Drawing of envelopes	Not (sufficiently) described	Not blinded	Not blinded	Intention to treat analysis	No protocol or registration	No concerns

Su 2005[93]	Low	Unclear	Unclear	Unclear	High	Unclear	Low
Support for judgement	Computer randomisation	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Unbalanced attrition. Could have affected outcome	No protocol or registration	No concerns
Irato 1997[94]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Cartaña 1994[95]	Low	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Random number table	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Buckley 1990[96]	Unclear	Unclear	Low	Low	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Blinded investigators and patients	Blinded outcome assessors	Unbalanced attrition. Could have affected outcome	No protocol or registration	No concerns
Garotta 1991[97]	Low	Low	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Hellbusch 2008[98]	Unclear	Unclear	Unclear	Unclear	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Crist 2018[99]	Unclear	Low	Low	Low	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Pharmacy controlled randomisation	Blinded investigators and patients	Blinded investigators and patients	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Nooyen 1994[100]	Low	Low	Unclear	Unclear	High	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not (sufficiently) described	Not (sufficiently) described	Unbalanced attrition. Could have affected outcome	No protocol or registration	No concerns
Tamayo 2008[101]	Low	Unclear	Unclear	Low	High	Unclear	Low
Support for judgement	Computerized randomisation	Not (sufficiently) described	Not (sufficiently) described	Blinded outcome assessor	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Olak 1991[102]	Low	Low	Low	Low	Unclear	Unclear	Low
Support for judgement	Central random number generation	Central random number generation	Blinded investigators and patients	Blinded outcome assessor	Not (sufficiently) described	No protocol or registration	No concerns
Jiang 2004[103]	Low	High	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Random number list	Open list	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Hall 1998[104]	Low	Low	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Computer randomisation	Sequentially numbered, opaque, sealed envelopes	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Orlando 2015[105]	Low	Low	Unclear	Unclear	Low	Low	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not (sufficiently) described	Not (sufficiently) described	All patients complied with the study protocol	All predefined outcomes reported	No concerns
Maier 1992[106]	High	High	High	Unclear	Unclear	Unclear	Low
Support for judgement	Randomisation by even and uneven days	Randomisation by even and uneven days	No blinding described and no allocation concealment	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Mann 1990[107]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low

Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Rajan 2005[108]	Low	Unclear	Low	Unclear	Unclear	Unclear	Low
Support for judgement	Drawing of envelopes	Not (sufficiently) described	Blinded investigators	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Campos 2015[109]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Lindeboom 2003[110]	Low	High	Unclear	Low	Unclear	Unclear	Low
Support for judgement	Random number list	Open list	Not (sufficiently) described	Blinded outcome assessor	Not (sufficiently) described	No protocol or registration	No concerns
Cioaca 2002[111]	Unclear	Unclear	Unclear	Low	Low	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Blinded outcome assessor	Attrition low and balanced. Unlikely to affect outcome	No protocol or registration	No concerns
Wahab 2013[112]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Danda 2010[113]	Unclear	Unclear	Low	Low	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Blinded investigators and patients	Blinded outcome assessor	Not (sufficiently) described	No protocol or registration	No concerns
Kang 2009[114]	Low	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Computer randomisation	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Rajabi 2012[115]	Unclear	Unclear	Low	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Mui 2005[116]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Karran 1993[117]	Unclear	Unclear	Unclear	Unclear	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Ishibashi 2014[118]	Unclear	Unclear	Low	Unclear	Low	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Randomisation after procedure	Not (sufficiently) described	Attrition low and balanced. Unlikely to affect outcome	No protocol or registration	No concerns
Ishibashi 2009[119]	Unclear	Unclear	Low	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Randomisation after procedure	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
McArdle 1995[120]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Becker 1991[121]	Unclear	Unclear	Low	Low	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Blinded investigators and patients	Blinded outcome assessor	Not (sufficiently) described	No protocol or registration	No concerns
Fujita 2015[122]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Lau 1990[123]	Unclear	Unclear	Low	Low	High	Unclear	Low

Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Randomisation after procedure	Blinded outcome assessor	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Yang 2001[124]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Bozorgzadeh 1999[125]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Hanif 2015[126]	High	High	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Randomisation by alternating assignment	Randomisation by alternating assignment	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Chang 2005[127]	Low	Low	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No concerns
Takemoto 2015[128]	Low	Unclear	Low	Low	High	Low	Low
Support for judgement	Computer randomisation	Not (sufficiently) described	Investigators blinded	Outcome assessors blinded	High attrition relative to events. Could have affected outcome	All predefined outcomes reported	No concerns
Lin 2011[129]	Low	unclear	Unclear	Low	low	Unclear	Low
Support for judgement	Computer randomisation	Not (sufficiently) described	Not (sufficiently) described	Blinded outcome assessor	Intent-to-treat analysis	No protocol or registration	No concerns
Niederhauser 1997[130]	Low	Unclear	Low	Unclear	Low	Unclear	Low
Support for judgement	Randomisation list	Not (sufficiently) described	Randomisation after procedure	Not (sufficiently) described	All participants were analysed	No protocol or registration	No concerns
Liu 2008[131]	Low	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Computer randomisation	Not (sufficiently) described	Randomisation after procedure	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Carroll 2003[132]	unclear	unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Righi 1996[133]	unclear	unclear	Unclear	Unclear	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Bidkar 2014[134]	Low	Unclear	Low	Low	Low	Unclear	Low
Support for judgement	Computer randomisation	Not (sufficiently) described	Blinded investigators	Blinded outcome assessors	All participants were analysed	No protocol or registration	No concerns
Abubaker 2001[135]	Unclear	Low	Low	Low	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Central randomisation	Blinded investigators and participants	Blinded outcome assessors	High attrition relative to events. Could have affected outcome	No protocol or registration	No concerns
Eshghpour 2014[136]	Unclear	Unclear	Unclear	Unclear	Low	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	All participants were analysed	No protocol or registration	No concerns
Jansisyanont 2008[137]	Unclear	Unclear	Unclear	Unclear	High	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	High attrition relative to events. Could	No protocol or registration	No concerns

					have affected outcome		
Baqain 2004[138]	Low	Low	Low	low	Low	Unclear	Low
Support for judgement	Central randomisation by random list	Central randomisation by random list	Blinded investigators and patients	Blinded outcome assessors	All participants were analysed	No protocol or registration	No concerns
Bentley 1999[139]	Unclear	Unclear	Low	Low	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Blinded investigators and patients	Blinded outcome assessors	Not (sufficiently) described	No protocol or registration	No concerns
Fridrich 1994[140]	Unclear	Unclear	Unclear	Unclear	Low	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	All participants were analysed	No protocol or registration	No concerns
Togo 2007[141]	Low	Low	Unclear	Unclear	low	unclear	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Not (sufficiently) described	Not (sufficiently) described	All participants were analysed	No protocol or registration	No concerns
Sugawara 2018[142]	Low	Low	Low	Unclear	Low	Low	Low
Support for judgement	Central computer randomisation	Central computer randomisation	Randomisation after procedure	Not (sufficiently) described outcome	All participants were analysed	All predefined outcomes reported	No concerns
Gupta 2010[143]	Low	Low	Low	Low	Low	Unclear	Low
Support for judgement	Randomisation by random number table	Allocation concealed throughout the study	Blinded investigators and patients	Blinded outcome assessors	Attrition low. Unlikely to affect outcome.	No protocol or registration	No concerns
Otani 2004[144]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Sawyer 1990[145]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
Davis 2017[146]	Low	Unclear	Low	Low	High	Low	Low
Support for judgement	Randomisation by drawing envelopes	Not (sufficiently) described	Blinded investigators and patients	Blinded outcome assessors	High attrition relative to events. Could have affected outcome	All predefined outcomes reported	No concerns
Park 2010[147]	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Support for judgement	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	Not (sufficiently) described	No protocol or registration	No concerns
* Information obtained through correspondence with author							

Appendix 11. Funnel plot: Postoperative continuation of surgical antibiotic prophylaxis > 24h vs postoperative continuation of surgical antibiotic prophylaxis <= 24h

The figure illustrates the distribution of effect estimates of the different studies (x-axis) against their precision (y-axis). Asymmetry across the vertical midline, representing the overall effect estimate of the meta-analysis, indicates publication bias. Both funnel plots show a symmetrical distribution and no indication of publication bias.

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