**BJID-D-22-00193 – Supplementary Material**

**Appendix**

Text A1- Search strategy

**PUBMED**

(Surgical Wound Infection[mh] OR Surgical Wound Infection\*[tw] OR Surgical Site Infection\*[tw] OR Postoperative Wound Infection\*[tw] OR Infection/surgery[mh] OR ((Surgical Procedures, Operative[mh] OR Operative Surgical Procedure\*[tw] OR Operative Procedure\*[tw] OR surgery[tw] OR surgical[tw] OR operative[tw] OR postoperative[tw]) AND (Infection/prevention and control[mh] OR infection\*[tw])))

AND

(((Gram-Negative[tw] OR Gram Negative[tw]) AND (bacteria[tw] OR rod[tw] OR rods[tw] OR cocc\*[tw] OR bacill\*[tw])) OR gram-negative bacteria[mh] OR gram-negative bacteri\*[tw] OR coccus, gram negative[tw] OR gram negative bacillus[tw] OR gram negative coccus[tw] OR gram negative germ[tw] OR gram negative microbium[tw] OR gram negative microorganism[tw] OR gram negative organism[tw] OR gram negative rod[tw] OR gnb[tw] OR Gram-Negative Bacterial Infections[mh] OR Gram-Negative Bacterial Infection\*[tw] OR calymmatobacterium[tw] OR klebsiella[tw] OR escherichia[tw] OR enterobacteriaceae[tw] OR enteric bacteria[tw] OR enterobacteria[tw] OR enterobacteriacea[tw] OR enterobacterium[tw] OR fermenting bacteri\*[tw] OR fermentative bacill\*[tw] OR fermentative bacteri\*[tw] OR fermenting bacill\*[tw] OR nonfermentative bacill\*[tw] OR nonfermentative bacteri\*[tw] OR nonfermenting bacill\*[tw] OR nonfermenting bacteri\*[tw] OR pseudomonas[tw] OR acinetobacter[tw] OR acinetobacterium[tw] OR enterobacter[tw] OR proteus[tw] OR proteus bacillus[tw] OR serratia[tw] OR citrobacter[tw] OR bacteroides[tw] OR providencia[tw] OR stenotrophomonas[tw] OR burkholderia[tw] OR morganella[tw] OR coli[tw] OR pneumoniae[tw] OR aeruginosa[tw] OR baumannii[tw] OR mirabilis[tw])

AND

(Drug Resistance[mh] OR Drug Resistance, Multiple[mh] OR resistan\*[tw] OR XDR[tw] OR MDR[tw] OR carbapenemase[tw] OR ESBL[tw] OR beta-lactamase[tw] OR betalactamase[tw] OR NDM[tw] OR KPC[tw] OR OXA-48[tw])

AND

((Antibiotic prophylaxis[mh] OR Antibiotic prophylaxis[tw] OR Antimicrobial prophylaxis[tw] OR prophylactic antibiotic\*[tw] OR Antibiotic Premedication\*[tw]) OR (Fecal Microbiota Transplantation[mh] OR Fecal Transplant\*[tw] OR Donor Feces Infusion\*[tw] OR Intestinal Microbiota Transfer\*[tw] OR Fecal Microbiota Transplant\*[tw]) OR ((Decontamination[mh] OR Decontamination[tw] OR Decolonization[tw]) AND (Gastrointestinal[tw] OR GI Tract\*[tw] OR Digestive[tw] OR Gastrointestinal Tract[mh] OR intestin\*[tw] OR Gut[tw])) OR prevent\*[tw] OR prevention and control[sh] OR avoid\*[tw] OR reduc\*[tw] OR Pre-Exposure Prophylaxis[mh] OR Post-Exposure Prophylaxis[mh] OR Secondary Prevention[mh] OR Primary Prevention[mh] OR Anti-Infective Agents, Local/surgery[mh] OR ((Anti-Bacterial Agents[Pharmacological Action] OR Anti-Infective Agents[tw] OR Anti-Infective Agents[mh]) AND (topic\*[tw] OR local[tw])))

**LILACS**

(mh:"Surgical Wound Infection" OR ((tw:Surgical OR tw:postoperat\* OR tw:operat\* OR tw:pós-operatória OR tw:cirúrgic\* OR tw:quirúrgic\*) AND (tw:Wound OR tw:Site OR tw:sítio OR tw:sitio OR tw:ferida OR tw:herida OR tw:procedure\* OR tw:procedimento\* OR tw:procedimiento\*) AND (tw:Infection\* OR tw:infecç\* OR tw:infecci\* OR tw:infectad\*)) OR mh:infection/SU OR ((mh:"Surgical Procedures, Operative" OR (tw:"Operative Surgical" tw:Procedure\*) OR (tw:Operative tw:Procedure\*) OR tw:surgery OR tw:surgical OR tw:operative OR tw:postoperative) AND (mh:"bacterial infections/PC" OR tw:infection\*)))

AND

(((tw:Gram-Negativ\* OR tw:fermenting OR tw:fermentative OR tw:fermentador\*) AND (tw:bacteri\* OR tw:bactéria\* OR tw:rod OR tw:rods OR tw:cocc\* OR tw:bacil\* OR tw:bastonete\* OR tw:germ\* OR tw:microbium OR tw:microorganism\* OR tw:organism\*)) OR tw:GNB OR tw:BGN OR mh:"gram-negative bacteria" OR mh:"Gram-Negative Bacterial Infections" OR (tw:"Gram-Negative Bacterial" tw:Infection\*) OR (tw:"Gram Negative Bacterial" tw:Infection\*) OR tw:calymmatobacterium OR tw:klebsiella OR tw:escherichia OR tw:enterobacteriaceae OR tw:"enteric bacteria" OR tw:enterobacteria OR tw:enterobacteriacea OR tw:enterobacterium OR pseudomonas OR acinetobacter OR acinetobacterium OR enterobacter OR proteus OR tw:proteus bacillus OR serratia OR citrobacter OR bacteroides OR providencia OR stenotrophomonas OR burkholderia OR morganella OR coli OR pneumoniae OR aeruginosa OR baumannii OR mirabilis)

AND

(mh:G07.690.773.984$ OR mh:"Drug Resistance" OR resistan\* OR resisten\* OR resistên\* OR tw:XDR OR tw:MDR OR tw:carbapenemase OR tw:ESBL OR tw:beta-lactamase OR tw:betalactamase OR tw:NDM OR tw:KPC OR tw:OXA-48)

AND

((mh:E02.319.162.150$ OR mh:E02.319.703.150$ OR mh:"Antibiotic prophylaxis" OR tw:"Antibiotic prophylaxis" OR tw:"Antimicrobial prophylaxis" OR tw:"prophylactic antibiotic" OR tw:"Antibiotic Premedication" OR tw:"antibioticoterapia profilática" OR tw:antibioticoprofilaxia OR tw:"antibiótico profilático" OR tw:"profilaxia antimicrobiana" OR tw:"profilaxia cirúrgica" OR tw:"Antibioticoterapia profiláctica" OR tw:"profilaxis antibiótica" OR tw:"antibiótico profiláctico" OR tw:"profilaxis antimicrobiana" OR tw:"profilaxis quirúrgica") OR (mh:E02.095.231$ OR mh:"Fecal Microbiota Transplantation" OR (tw:Fecal tw:Transplant\*) OR tw:"Donor Feces Infusion" OR tw:"Intestinal Microbiota Transfer" OR tw:"Fecal Microbiota Transplant" OR tw:"Transplante de microbiota fecal" OR tw:"Transplante fecal") OR ((mh:Decontamination OR tw:Decontamination OR tw:descontamina\* OR tw:descoloniza\* OR tw:decolonization) AND (tw:Gastrointestinal OR tw:"GI Tract" OR tw:Digestiv\* OR mh:"Gastrointestinal Tract" OR tw:digestóri\* OR tw:gut)) OR mh:"Primary Prevention" OR tw:preven\* OR tw:avoid\* OR tw:reduc\* OR tw:evita\* OR tw:redução OR tw:reduz OR mh:"Pre-Exposure Prophylaxis" OR mh:"Post-Exposure Prophylaxis" OR mh:"Secondary Prevention" OR mh:"Anti-Infective Agents, Local" OR ((mh:"Anti-Bacterial Agents" OR mh:"Anti-Infective Agents" OR tw: "Anti-Infective Agents" OR tw:antibiotic\* OR tw:antibiótic\* OR tw:antimicrobia\* OR tw:antiinfeccioso\* OR tw:anti-infeccioso\*) AND (tw:topic\* OR tw:tópic\* OR tw:local)))

**EMBASE**

('surgical infection'/exp OR 'infection, surgical' OR 'post-operative wound infection' OR 'post-operative wound infections' OR 'postoperative wound infection' OR 'postoperative wound infections' OR 'surgical infection' OR 'surgical infections' OR 'surgical site infection' OR 'surgical wound infection' OR 'surgical wound infections' OR (('surgery'/exp OR 'diagnosis, surgical':ti,ab OR 'diagnostic techniques, surgical':ti,ab OR 'operation':ti,ab OR 'operation care':ti,ab OR 'operative intervention':ti,ab OR 'operative repair':ti,ab OR 'operative restoration':ti,ab OR 'operative surgical procedure':ti,ab OR 'operative treatment':ti,ab OR 'research surgery':ti,ab OR 'resection':ti,ab OR 'specialties, surgical':ti,ab OR 'surgery':ti,ab OR 'surgery, operative':ti,ab OR 'surgical care':ti,ab OR 'surgical correction':ti,ab OR 'surgical exposure':ti,ab OR 'surgical intervention':ti,ab OR 'surgical management':ti,ab OR 'surgical operation':ti,ab OR 'surgical practice':ti,ab OR 'surgical procedures, operative':ti,ab OR 'surgical repair':ti,ab OR 'surgical research':ti,ab OR 'surgical restoration':ti,ab OR 'surgical service':ti,ab OR 'surgical speciality':ti,ab OR 'surgical specialty':ti,ab OR 'surgical therapy':ti,ab OR 'surgical treatment':ti,ab) AND 'infection'/exp))

AND

('gram negative bacterium'/exp OR 'gram negative bacterium':ti,ab OR 'coccus, gram negative':ti,ab OR 'gram negative bacillus':ti,ab OR 'gram negative bacteria':ti,ab OR 'gram negative coccus':ti,ab OR 'gram negative germ':ti,ab OR 'gram negative microbium':ti,ab OR 'gram negative microorgananism':ti,ab OR 'gram negative microorganism':ti,ab OR 'gram negative organism':ti,ab OR 'gram negative rod':ti,ab OR 'gram-negative bacteria':ti,ab OR gnb:ti,ab OR 'klebsiella'/exp OR 'calymmatobacterium':ti,ab OR 'klebsiella':ti,ab OR 'escherichia'/exp OR 'escherichia':ti,ab OR 'enterobacteriaceae'/exp OR 'enterobacteriaceae':ti,ab OR 'enteric bacteria':ti,ab OR 'enterobacteria':ti,ab OR 'enterobacteriacea':ti,ab OR 'enterobacterium':ti,ab OR 'non-fermenting bacterium'/exp OR 'non fermentative bacilli':ti,ab OR 'non fermentative bacillus':ti,ab OR 'non fermentative bacteria':ti,ab OR 'non fermentative bacterium':ti,ab OR 'non fermenting bacilli':ti,ab OR 'non fermenting bacillus':ti,ab OR 'non fermenting bacteria':ti,ab OR 'non fermenting bacterium':ti,ab OR 'non-fermentative bacilli':ti,ab OR 'non-fermentative bacillus':ti,ab OR 'non-fermentative bacteria':ti,ab OR 'non-fermentative bacterium':ti,ab OR 'non-fermenting bacilli':ti,ab OR 'non-fermenting bacillus':ti,ab OR 'non-fermenting bacteria':ti,ab OR 'non-fermenting bacterium':ti,ab OR 'nonfermentative bacilli':ti,ab OR 'nonfermentative bacillus':ti,ab OR 'nonfermentative bacteria':ti,ab OR 'nonfermentative bacterium':ti,ab OR 'nonfermenting bacilli':ti,ab OR 'nonfermenting bacillus':ti,ab OR 'nonfermenting bacteria':ti,ab OR 'nonfermenting bacterium':ti,ab OR 'pseudomonas'/exp OR 'pseudomonas':ti,ab OR 'acinetobacter'/exp OR 'acinetobacter':ti,ab OR 'acetinobacter':ti,ab OR 'acinetobacterium':ti,ab OR enterobacter:ti,ab OR 'proteus'/exp OR 'proteus':ti,ab OR 'proteus bacillus':ti,ab OR 'serratia'/exp OR 'serratia':ti,ab OR 'citrobacter'/exp OR 'citrobacter':ti,ab OR 'bacteroides'/exp OR 'bacteroides' OR 'providencia'/exp OR 'providencia':ti,ab OR 'providentia':ti,ab OR 'stenotrophomonas'/exp OR 'stenotrophomonas' OR 'burkholderia'/exp OR 'burkholderia' OR 'morganella'/exp OR 'morganella' OR coli:ti,ab OR pneumoniae:ti,ab OR aeruginosa:ti,ab OR baumannii:ti,ab OR mirabilis:ti,ab)

AND

('antibiotic resistance'/exp OR 'antibacterial drug resistance':ti,ab OR 'antibacterial resistance':ti,ab OR 'antibiotic non-susceptibility':ti,ab OR 'antibiotic nonsusceptibility':ti,ab OR 'antibiotic resistance':ti,ab OR 'antimicrobial drug resistance':ti,ab OR 'antimicrobial resistance':ti,ab OR 'bacterial drug resistance':ti,ab OR 'bacterial resistance':ti,ab OR 'bacterium resistance':ti,ab OR 'drug resistance, bacterial':ti,ab OR 'drug resistance, microbial':ti,ab OR 'microbial drug resistance':ti,ab OR 'resistance, antibiotic':ti,ab OR 'extended spectrum beta lactamase'/exp OR 'esbl':ti,ab OR 'extended spectrum beta lactamase':ti,ab OR ndm:ti,ab OR mdr:ti,ab OR 'extensive drug resistance'/exp OR 'xdr resistance':ti,ab OR 'extensive drug resistance':ti,ab OR 'extensively drug resistance':ti,ab OR xdr:ti,ab OR 'multidrug resistance'/exp OR 'mdr resistance':ti,ab OR 'drug resistance, multiple':ti,ab OR 'drug resistance, multiple, bacterial':ti,ab OR 'multi-drug resistance':ti,ab OR 'multidrug resistance':ti,ab OR 'multiple drug resistance':ti,ab OR 'carbapenemase'/exp OR 'carbapenemase':ti,ab OR 'carbapenemases':ti,ab OR 'kpc gene'/exp OR kpc:ti,ab OR 'oxa 48 gene'/exp OR 'oxa 48':ti,ab)

AND

('antibiotic prophylaxis'/exp OR 'antibiotic prevention':ti,ab OR 'prevention, antibiotic':ti,ab OR 'prophylaxis, antibiotic':ti,ab OR (('antibiotic agent'/exp OR 'antibiotic' OR 'antibiotic agent' OR 'antibiotic combination' OR 'antibiotic drug' OR 'antibiotics' OR 'antibiotics, combined' OR 'combined antibiotic' OR 'antibiotics, miscellaneous' OR 'antiinfective agent'/exp OR 'anti bacterial agent' OR 'anti bacterial agents' OR 'anti infective agents' OR 'anti infectives, otic' OR 'anti-bacterial agents' OR 'anti-infective agents' OR 'anti-infectives, otic' OR 'antibacterial' OR 'antibacterial agent' OR 'antibacterial drug' OR 'antibacterial soap' OR 'antibacterial spectrum' OR 'antiinfective agent' OR 'antiinfectives, otic' OR 'antimicrobial' OR 'antimicrobial agent' OR 'antimicrobial compound' OR 'antimicrobial drug' OR 'antimicrobial factor' OR 'antiseptic' OR 'antiseptic agent' OR 'antiseptic cream' OR 'antiseptic foam' OR 'antiseptic soap' OR 'chemotherapeutic agent' OR 'chemotherapeutic drug' OR 'chemotherapeutica' OR 'microbiological agent') AND ('prophylaxis'/exp OR 'disease prevention' OR 'disease prophylaxis' OR 'health protection' OR 'prevention, disease' OR 'preventive medication' OR 'preventive therapy' OR 'preventive treatment' OR 'prophylactic institution' OR 'prophylactic management' OR 'prophylactic medication' OR 'prophylactic therapy' OR 'prophylactic treatment' OR 'prophylaxis')) OR 'antibiotic prophylaxis':ti,ab OR (('decolonization'/exp OR 'decontamination'/exp OR 'decontamination':ti,ab) AND ('digestive system'/exp OR 'alimentary canal':ti,ab OR 'alimentary system':ti,ab OR 'alimentary tract':ti,ab OR 'apparatus digestorius':ti,ab OR 'canalis alimentarius':ti,ab OR 'digestive organ':ti,ab OR 'digestive system':ti,ab OR 'digestive tract':ti,ab OR 'tractus digestivus':ti,ab OR digestive:ti,ab OR oral:ti,ab OR gastrointestinal:ti,ab OR gut:ti,ab OR intestine:ti,ab OR intestinal:ti,ab)) OR 'fecal microbiota transplantation'/exp OR 'fecal microbiota transplantation':ti,ab OR 'fecal transplant':ti,ab OR 'fecal transplantation':ti,ab OR 'stool transplant':ti,ab OR 'stool transplantation':ti,ab OR 'feces transplantation'/exp OR 'donor feces infusion':ti,ab OR 'topical antiinfective agent'/exp OR 'anti infective agents, local':ti,ab OR 'anti infectives, topical':ti,ab OR 'anti-infective agents, local':ti,ab OR 'anti-infectives, topical':ti,ab OR 'antiinfectives, topical':ti,ab OR 'local anti infective agent':ti,ab OR 'local antiinfective agent':ti,ab OR 'topical antiinfective':ti,ab OR 'topical antiinfective agent':ti,ab OR 'topical antiinfectives':ti,ab OR 'prevention and control'/exp OR 'prevention and control':ti,ab OR 'prophylaxis'/exp OR 'disease prevention':ti,ab OR 'disease prophylaxis':ti,ab OR 'health protection':ti,ab OR 'prevention, disease':ti,ab OR 'preventive medication':ti,ab OR 'preventive therapy':ti,ab OR 'preventive treatment':ti,ab OR 'prophylactic institution':ti,ab OR 'prophylactic management':ti,ab OR 'prophylactic medication':ti,ab OR 'prophylactic therapy':ti,ab OR 'prophylactic treatment':ti,ab OR 'prophylaxis':ti,ab OR avoid:ti,ab OR reduce:ti,ab OR reduction:ti,ab OR avoidance:ti,ab OR protection:ti,ab OR protect:ti,ab)

**CINAHL**

(MH “Surgical Wound Infection” OR TX Surgical Wound Infection\* OR TX Surgical Site Infection\* OR TX Postoperative Wound Infection\* OR MH "Infection+/SU" OR ((MH "Surgery, Operative+" OR TX Operative Surgical Procedure\* OR TX Operative Procedure\* OR TX surgery OR TX surgical OR TX operative OR TX postoperative) AND (MH "Infection+/PC" OR TX infection\*)))

AND

(((TX Gram-Negative OR TX Gram Negative) AND (TX bacteria OR TX rod OR TX rods OR TX cocc\* OR TX bacill\*)) OR MH “gram-negative bacteria” OR TX gram-negative bacteri\* OR TX coccus, gram negative OR TX gram negative bacillus OR TX gram negative coccus OR TX gram negative germ OR TX gram negative microbium OR TX gram negative microorganism OR TX gram negative organism OR TX gram negative rod OR TX gnb OR MH “Gram-Negative Bacterial Infections” OR TX Gram-Negative Bacterial Infection\* OR TX calymmatobacterium OR TX klebsiella OR TX Escherichia OR TX enterobacteriaceae OR TX enteric bacteria OR TX enterobacteria OR TX enterobacteriacea OR TX enterobacterium OR TX fermenting bacteri\* OR TX fermentative bacill\* OR TX fermentative bacteri\* OR TX fermenting bacill\* OR TX nonfermentative bacill\* OR TX nonfermentative bacteri\* OR TX nonfermenting bacill\* OR TX nonfermenting bacteri\* OR TX pseudomonas OR TX Acinetobacter OR TX acinetobacterium OR TX enterobacter OR TX proteus OR TX proteus bacillus OR TX serratia OR TX citrobacter OR TX bacteroides OR TX providencia OR TX stenotrophomonas OR TX burkholderia OR TX morganella OR TX coli OR TX pneumoniae OR TX aeruginosa OR TX baumannii OR TX mirabilis)

AND

(MH "Drug Resistance" OR MH "Drug Resistance, Microbial" OR MH "Drug Resistance, Multiple" OR TX resistan\* OR TX XDR OR TX MDR OR TX carbapenemase OR TX ESBL OR TX beta-lactamase OR TX betalactamase OR TX NDM OR TX KPC OR TX OXA-48)

AND

((MH "Antibiotic Prophylaxis" OR TX Antibiotic prophylaxis OR TX Antimicrobial prophylaxis OR TX prophylactic antibiotic\* OR TX Antibiotic Premedication) OR (MH "Fecal Microbiota Transplantation" OR TX Fecal Microbiota Transplant\* OR TX Donor Feces Infusion\* OR TX Intestinal Microbiota Transfer\* OR TX Fecal Transplant\*) OR ((TX Decontamination OR TX Decolonization) AND (TX Gastrointestinal OR TX Digestive OR MH "Gastrointestinal Transit" OR TX intestin\* OR TX Gut)) OR TX prevent\* OR SU “prevention and control” OR TX avoid\* OR TX reduc\* OR MH "Pre-Exposure Prophylaxis" OR TX Prophylaxis OR MH "Preventive Health Care" OR MH "Antiinfective Agents, Local" OR ((TX Anti-Bacterial Agents OR TX Anti-Infective Agents OR MH "Anti-Infective Agents" OR TX antibiotic\* OR TX antimicrobial\*) AND (TX topic\* OR TX local)))

Table A1. Antimicrobials with potential action against Multidrug resistant Gram Negative Bacilli (MDR GNB) of epidemiological importance [1-4].

|  |  |
| --- | --- |
| MDR GNB | Drugs with potential action |
| Enterobacteria resistant to 3rd generation cephalosporins / ESBL-producing | Piperacillin / tazobactam  Carbapenems  Aminoglycosides  Tigecycline  Phosphomycin  Polymyxins  Ceftazidime / avibactam  Temocillin  Ceftolozane / tazobactam |
| Carbapenemase-producing enterobacteria | Aminoglycosides  Tigecycline  Phosphomycin  Polymyxins  Ceftazidime / avibactam  Ceftolozane / tazobactam |
| Pseudomonas aeruginosa resistant to carbapenemas | Aminoglycosides  Polymyxins  Ceftazidime / avibactam |
| Carbapenema-resistant acinetobacter | Aminoglycosides  Polymyxins  Tigecycline |

References:

1. Schuetz A, Salcedo SR, Tamma PD. Point-Counterpoint: Piperacillin-tazobactam should be used to treat infections with ESBL-positive organisms. J Clin Microbiol. 13 de dezembro de 2017;JCM.01917-17.

2. Zavascki AP, Bulitta JB, Landersdorfer CB. Combination therapy for carbapenem-resistant Gram-negative bacteria. Expert Rev Anti Infect Ther. dezembro de 2013;11(12):1333–53.

3. Falcone M, Paterson D. Spotlight on ceftazidime/avibactam: a new option for MDR Gram-negative infections. J Antimicrob Chemother. outubro de 2016;71(10):2713–22.

4. Yaneja N, Kaur H. Insights into Newer Antimicrobial Agents against Gram-negative Bacteria. Microbiol Insights. janeiro de 2016;9:MBI.S29459.

Table A2 - Results of the risk analysis of the quality assessment of the cohort studies using Newcastle-Otawa Scale

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quality assessment of cohort studies** | | | | |
| **Studies** | **Selection criteria** | **Comparability between cohorts** | **Outcome Assessment** | **Total of stars (0-9)** |
| Abboud CS (2013) | \*\* | \* |  | 3 |
| Freire MP (2015) | \*\*\* | \* | \*\* | 6 |
| Nutman A (2019) | \*\*\* | \*\* | \*\* | 7 |

Good quality: 3 or 4 stars in the domain of selection criteria AND 1 or 2 stars in the domain of comparability AND 2 or 3 stars in the field of outcome evaluation

Reasonable quality: 2 stars in the selection criteria domain AND 1 or 2 stars in the comparability domain AND 2 or 3 stars in the outcome evaluation domain

Poor quality: 0 or 1 star in the selection criteria domain OR 0 stars in the comparability domain OR 0 or 1 stars in the outcome evaluation domai

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table A3. Grading of Recommendations, Assessment, Development and Evaluation (GRADE) method for assessment of general quality of the evidence and the trust in strength of the recommendation - summary of results | | | | | | |
| **Surgical antibiotic prophylaxis with action on MDR GNB (with aminoglycoside or ertapenem) compared to cephalosporin prophylaxis** | | | | | | |
| **Patient or population**: surgery patients under risk of infection  **Context**:  **Intervention**: Surgical antibiotic prophylaxis with action on MDR GNB (with aminoglycoside or ertapanem)  **Comparison**: Surgical antibiotic prophylaxis with cephalosporin (1st, 2nd or 3rd generation) | | | | | | |
| Outcome | **Potencial absolut effect \*** (95% CI) | | Relative effect  (95% CI) | Number of participants  (studies) | Certainty of the evidence  (GRADE) | Comments |
| **Risk with antibiotic prophylaxis with cephalosporin** | **Risk with antibiotic prophylaxis with action on MDR GNBs (with aminoglycoside or ertapenem)** |
| Surgical Site Infection (SSI) in renal transplantation patients Expressed as: Event rate  Follow-up : average 45 days | 155 in 1,000 | **74 in 1,000**  (46 - 119) | **RR 0.48**  (0.30 - 0.77) | 854  (2 observational studies) | ⨁⨁⨁⨁  HIGH a | The size of the effect and the confidence interval demonstrated the effectiveness of surgical antibiotic prophylaxis with aminoglycosides for SSI. Patients who used this intervention had a 52% risk reduction for the occurrence of the SSI outcome compared to patients in the cephalosporin group. The certainty of this estimate was considered high.The increase in population with the aggregation of studies influenced the result. |
| Surgical site infection by multi-drug resistant Gram- negative bacilli (SSI by MDR GNB) in renal transplantation patients  Expressed as: Event rate  Follow-up: average 45 days | 43 in 1,000 | **25 in 1,000**  (11 - 58) | **RR 0.57**  (0.25 - 1.34) | 854  (2 observational studies) | ⨁⨁⨁◯  MODERATE a,b | The size of the effect and the confidence interval of the evidence demonstrated the effectiveness of surgical antibiotic prophylaxis with aminoglycosides for SSI by MDR GNB. Patients who used the intervention had a reduced risk of occurrence of the outcome by 43% compared to patients who used cephalosporins. The certainty of this estimate was considered moderate. |
| Delayed renal graft function (DGF) Expressed as: Event rate  Follow-up: 60 days | 293 in 1,000 | **366 in 1,000**  (296 - 451) | **RR 1.25**  (1.01 - 1.54) | 809  (1 observational study) | ⨁⨁◯◯  LOW c | Low confidence in the effect estimate. Patients undergoing prophylaxis with aminoglycosides have an 25% increase in the risk of developing delayed renal graft function, however the confidence interval crosses the null effect line, which means that this result may be due to chance. |
| Loss of renal graft (LRG)  Expressed as: Event rate  Follow-up: 60 days | 102 in 1,000 | **78 in 1,000**  (47 - 128) | **RR 0.76**  (0.46 - 1.25) | 809  (1 observational study) | ⨁◯◯◯  VERY LOW c,d | Very low confidence in the effect estimate. Patients undergoing prophylaxis with aminoglycosides have an 24% reduction in the risk of developing loss of renal graft, however the confidence interval crosses the null effect line, which means that this result may be due to chance. |
| Urinary Tract Infection (UTI) Expressed as): Percentage Follow-up:  30 days | 333 in 1,000 | **47 in 1,000**  (7 - 350) | **RR 0.14**  (0.02 - 1.05) | 45  (1 observational study) | ⨁⨁◯◯  LOW c,e | Low confidence in the effect estimate. Patients undergoing prophylaxis with aminoglycosides have an 86% reduction in the risk of developing urinary tract infection, however the confidence interval crosses the null effect line, which means that this result may be due to chance . |
| Health care-associated infections (HAI)  Expressed as: Rate  Follow-up:  30 days | 542 in 1,000 | **190 in 1,000**  (76 - 493) | **RR 0.35**  (0.14 - 0.91) | 45  (1 observational study) | ⨁⨁⨁◯  MODERATE c,e | Moderate certainty about the effect estimate. Patients undergoing aminoglycoside prophylaxis have a risk of health care-associated infection reduced by 65%. |
| Death in 30 days (Death)  Expressed as): Percentage  Follow-up:  30 days | 83 in 1,000 | **47 in 1,000**  (5 - 488) | **RR 0.56**  (0.06 - 5.86) | 45  (1 observational study) | ⨁⨁◯◯  LOW c,f | Low certainty about the effect estimate. The RR suggests that patients undergoing aminoglycoside prophylaxis have a 44% reduction in the risk of death in 30 days, however the confidence interval is wide, crosses the null effect line, indicating that this association may be due to chance.  . |
| Deep surgical site infection after colon surgery (deep SSI colon surgery)  follow-up: 30 days | 110 in 1,000 | **97 in 1,000** (57 - 164) | **RR 0.88** (0.52 - 1.49) | 478 (1 observational study) | ⨁◯◯◯ VERY LOW b,g | Very low certainty about the effect estimate, based on a single observational study, where the RR suggests that patients who underwent prophylaxis with ertapenem had a reduced risk of 12% for the occurrence of deep SSI; however, the confidence interval exceeds the null effect line, indicating that such result may be due to chance. |
| SSI in patients undergoing colorectal surgery (SSI colon surgery)  rated with: Event Rate | 215 in 1,000 | **172 in 1,000** (121 - 252) | **RR 0.80** (0.56 - 1.17) | 478 (1 observational study) | ⨁⨁⨁◯ MODERATE b,h | The size of the effect and the confidence interval demonstrate the failure of peri-surgical antibiotic prophylaxis with ertapenem for preventing SSI in patients undergoing elective colorectal surgery. The certainty of this estimate was considered moderate. |
| MDR GNB SSI after colorectal surgery (MDR GNB SSI colon surgery)  rated with: Event Rate | 72 in 1,000 | **15 in 1,000** (5 - 44) | **RR 0.21**h (0.07 - 0.62) | 478 (1 observational study) | ⨁⨁⨁⨁ HIGH i | The size of the effect and its confidence interval demonstrate the effectiveness of antibiotic prophylaxis with ertapenem for elective colorectal surgeries in preventing SSI by MDR GNB; patients in intervention group had a reduced risk for occurrence of the outcome in 79% compared to patients in control group. The certainty of this estimate was considered high. |
| \*The risk in the intervention group (and its 95% confidence interval) is based on the risk assumed by the comparator group and the relative effect of the intervention (and its 95% CI).  .  **CI:** Confidence interval; **RR:** Risk ratio | | | | | | |
| **GRADE Working Group grades of evidence**  **High certainty:** We are very confident that the true effect lies close to that of the estimate of the effect  **Moderate certainty:** We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different  **Low certainty:** Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect  **Very low certainty:** We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect | | | | | | |

**Explanations**

a. There are confounders in both studies that favor intervention.

b. The confidence interval crosses the null effect line, the result may be due to chance.

c. Presence of confounding variables that favor intervention.

d. Effect magnitude based on small number of events; the confidence interval crosses the null effect line, the result may be due to chance.

e. Effect magnitude based on small number of events; small sample size; the confidence interval crosses the null effect line, the result may be due to chance.

f. Wide confidence interval; small sample size; magnitude of effect based on small number of events; the confidence interval crosses the null effect line, the result may be due to chance.

g. Risk of severe bias, observational study outcome assessed after hospital discharge for clinical visit or telephone follow-up.

h. Risk of severe bias, observational study.