

SUPPLEMENTARY MATERIAL

Antimicrobial susceptibility concordance between colonising and bloodstream ESBL and carbapenemase-producing Enterobacterales in allogeneic stem cell transplant recipients: a 10-year retrospective cohort study

Supplementary Table S1. Antimicrobial agents received between surveillance cultures and BSI onset, stratified by microorganism and resistance mechanism

Microorganism	β -lactam resistance mechanism	n	Agents received between the earliest surveillance culture and most recent surveillance culture	Agents received between most recent surveillance culture and CRE or ESBL-E BSI
<i>E. coli</i>	ESBL	14	CIP: 3, SXT: 7, AMX: 1, ATM: 2, CTX: 1, FEP: 1, TZP: 5, MEM: 3, AMK: 3, CZA: 2, C/T: 1, LVX: 1	CIP: 6, SXT: 12, CTX: 2, FEP: 1, TZP: 6, IPM: 2, MEM: 3, AMK: 4
<i>E. coli</i>	OXA-48***	2	CIP: 2, SXT: 2, AMX: 1, ATM: 2, CTX: 1, FEP: 1, TZP: 2, MEM: 2, AMK: 2, CZA: 2, C/T: 1, LVX: 1	CIP: 2, SXT: 2, CTX: 2, FEP: 1, TZP: 2, MEM: 2, AMK: 2
<i>E. coli</i>	VIM	2	CIP: 1, SXT: 1, AMX: 1, ATM: 1, CTX: 1, FEP: 1, TZP: 1, MEM: 1, AMK: 1, CZA: 1, C/T: 1, LVX: 1	CIP: 1, SXT: 1, CTX: 1, MEM: 3, AMK: 1
<i>E. cloacae</i>	ESBL	6	CIP: 3, SXT: 6, AMX: 4, CTX: 1, TZP: 3, MEM: 5, AMK: 1, C/T: 2, LVX: 2, TGC: 2	CIP: 3, SXT: 6, AMX: 2, TZP: 1, MEM: 3, AMK: 4, TGC: 1
<i>E. cloacae</i>	OXA-48***	3	CIP: 3, SXT: 3, AMX: 1, CTX: 1, TZP: 3, MEM: 5, AMK: 1, C/T: 2, LVX: 1, TGC: 2	SXT: 3, AMX: 2, TZP: 1, MEM: 3, AMK: 3
<i>E. cloacae</i>	VIM	3	CIP: 3, SXT: 6, AMX: 2, CTX: 2, TZP: 3, MEM: 5, AMK: 2, CZA: 2, C/T: 2, LVX: 2, TGC: 2	CIP: 3, SXT: 3, TZP: 1, MEM: 3, AMK: 4, TGC: 1
<i>K. pneumoniae</i>	ESBL	3	CIP: 1, SXT: 4, AMX: 1, TZP: 5, MEM: 2, AMK: 1, LVX: 1	SXT: 3, TZP: 2, MEM: 1
<i>K. pneumoniae</i>	OXA-48***	4	CIP: 1, SXT: 4, AMX: 1, TZP: 5, MEM: 2, AMK: 1	CIP: 3, SXT: 3, MEM: 1, CZA: 2
<i>K. pneumoniae</i>	VIM	3	CIP: 2, SXT: 3, AMX: 1, TZP: 3, MEM: 3, AMK: 1	CIP: 3, SXT: 3, TZP: 2, MEM: 2
<i>K. pneumoniae</i>	KPC	1	CIP: 1, SXT: 1, AMX: 1, TZP: 1, MEM: 1, AMK: 1	CIP: 1, SXT: 1, AMX: 1, MEM: 1
<i>K. oxytoca</i>	OXA-48***	2	CIP: 1, SXT: 2, TZP: 2, MEM: 2, AMK: 2	CIP: 1, SXT: 2, MEM: 2, AMK: 1
<i>K. oxytoca</i>	KPC	1	CIP: 1, SXT: 1, TZP: 1, MEM: 1, AMK: 1	CIP: 1, SXT: 1, MEM: 1, AMK: 1
TOTAL		44^{a,b}	CIP: 22, SXT: 40, AMX: 14, ATM: 5, CTX: 7, FEP: 3, TZP: 34, MEM: 32, AMK: 17, CZA: 7, C/T: 9, LVX: 9, TGC: 6	CIP: 24, SXT: 40, CTX: 5, FEP: 2, TZP: 15, IPM: 2, MEM: 25, AMK: 20, AMX: 5, TGC: 2, CZA: 2

AMK: amikacin; AMX: amoxicillin; ATM: aztreonam; CIP: ciprofloxacin; CTX: cefotaxime; CZA: ceftazidime-avibactam; C/T: ceftolozane-tazobactam; FEP: cefepime; IPM: imipenem; LVX: levofloxacin; MEM: meropenem; SXT: trimethoprim-sulfamethoxazole; TGC: tigecycline; TZP: piperacillin-tazobactam.

^aAntimicrobial use was reported as number of cases per period.

^bNot all 47 patients received antimicrobial therapy; analysis restricted to 44 patients. The three excluded pairs comprised two OXA-48 and one VIM episode.

***Note: All OXA-48-producing isolates co-harboured an ESBL.

Supplementary Table S2. Categorical agreement and susceptibility discrepancies between the earliest surveillance isolate and the bloodstream isolate, across all 47 colonisation–BSI pairs

Antimicrobial agents tested (n)	Agreement n (%)	Susceptibility discrepancy n (%)	Resistance discrepancy n (%)	Bidirectional discrepancy n (%)
Amoxicillin/clavulanate (46)	42 (91.3)	0 (0.0)	0 (0.0)	4 (8.7)
Cefoxitin (46)	44 (95.7)	0 (0.0)	0 (0.0)	2 (4.3)
Cefuroxime (31)	30 (96.8)	0 (0.0)	0 (0.0)	1 (3.2)
Ceftriaxone (43)	41 (95.3)	0 (0.0)	1 (2.3)	1 (2.3)
Ceftazidime (46)	41 (89.1)	0 (0.0)	2 (4.3)	3 (6.5)
Piperacillin/tazobactam (47)	44 (93.6)	0 (0.0)	0 (0.0)	3 (6.4)
Aztreonam (43)	36 (83.7)	0 (0.0)	5 (11.6)	2 (4.7)
Ertapenem (47)	44 (93.6)	0 (0.0)	0 (0.0)	3 (6.4)
Imipenem (24)	18 (75.0)	0 (0.0)	2 (8.3)	4 (16.7)
Meropenem (35)	26 (74.3)	2 (5.7)	1 (2.9)	6 (17.1)
Ceftazidime-avibactam (6)	6 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Colistin (22)	21 (95.5)	0 (0.0)	1 (4.5)	0 (0.0)
Ciprofloxacin (47)	46 (97.9)	0 (0.0)	0 (0.0)	1 (2.1)
Amikacin (47)	38 (80.9)	5 (10.6)	2 (4.3)	2 (4.3)
Gentamicin (47)	44 (93.6)	1 (2.1)	0 (0.0)	2 (4.3)
Tobramycin (42)	39 (92.9)	2 (4.8)	0 (0.0)	1 (2.4)
Cotrimoxazole (45)	43 (95.6)	0 (0.0)	1 (2.2)	1 (2.2)
Fosfomycin (8)	5 (62.5)	0 (0.0)	2 (25.0)	1 (12.5)
Tigecycline (14)	10 (71.4)	0 (0.0)	3 (21.4)	1 (7.1)
Total (686)	618 (90.1)	10 (1.5)	20 (2.9)	38 (5.5)

Totals are calculated across all antimicrobial susceptibility test comparisons; row counts may overlap as not all isolates were tested against all agents. In the 17 pairs with a single surveillance isolate available, the earliest and the most recent isolate coincide, and those comparisons therefore contribute identically to **Supplementary Tables S2** and **S3**. Amoxicillin and agents tested only sporadically were excluded from the agent-level analysis and are not reflected in the totals.

Supplementary Table S3. Categorical agreement and susceptibility discrepancies between the most recent surveillance isolate and the bloodstream isolate, across all 47 colonisation–BSI pairs

Antimicrobial agents tested (n)	Agreement n (%)	Susceptibility discrepancy n (%)	Resistance discrepancy n (%)	Bidirectional discrepancy n (%)
Amoxicillin/clavulanate (46)	42 (91.3)	0 (0.0)	1 (2.2)	3 (6.5)
Cefoxitin (46)	44 (95.7)	0 (0.0)	0 (0.0)	2 (4.3)
Cefuroxime (30)	30 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Ceftriaxone (43)	42 (97.7)	0 (0.0)	1 (2.3)	0 (0.0)
Ceftazidime (46)	43 (93.5)	0 (0.0)	1 (2.2)	2 (4.3)
Piperacillin/tazobactam (47)	45 (95.7)	0 (0.0)	0 (0.0)	2 (4.3)
Aztreonam (43)	38 (88.4)	0 (0.0)	4 (9.3)	1 (2.3)
Ertapenem (46)	46 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Imipenem (21)	18 (85.7)	0 (0.0)	2 (9.5)	1 (4.8)
Meropenem (32)	25 (78.1)	1 (3.1)	1 (3.1)	5 (15.6)
Ceftazidime-avibactam (6)	6 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Colistin (24)	24 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Ciprofloxacin (47)	46 (97.9)	0 (0.0)	0 (0.0)	1 (2.1)
Amikacin (47)	40 (85.1)	3 (6.4)	2 (4.3)	2 (4.3)
Gentamicin (47)	44 (93.6)	1 (2.1)	1 (2.1)	1 (2.1)
Tobramycin (43)	40 (93.0)	1 (2.3)	1 (2.3)	1 (2.3)
Cotrimoxazole (45)	44 (97.8)	0 (0.0)	0 (0.0)	1 (2.2)
Fosfomycin (7)	5 (71.4)	0 (0.0)	2 (28.6)	0 (0.0)
Tigecycline (9)	5 (55.6)	0 (0.0)	4 (44.4)	0 (0.0)
Total (675)	627 (92.9)	6 (0.9)	20 (3.0)	22 (3.3)

Totals are calculated across all antimicrobial susceptibility test comparisons; row counts may overlap as not all isolates were tested against all agents. In the 17 pairs with a single surveillance isolate available, the earliest and the most recent isolate coincide, and those comparisons therefore contribute identically to **Supplementary Tables S2** and **S3**. Amoxicillin and agents tested only sporadically were excluded from the agent-level analysis and are not reflected in the totals.