

Communicable Disease Report

Vancomycin-resistant enterococci

Enterococci (faecal streptococci) have been recognised as a major cause of nosocomial infection in recent years¹, in addition to causing community-acquired urinary tract infection and endocarditis. Enterococci are intrinsically resistant to cephalosporins and have developed resistance to tetracyclines, macrolides and chloramphenicol. The recent emergence of high-level resistance to gentamicin and penicillins, and resistance to the glycopeptide antimicrobials (vancomycin and teicoplanin), has compromised the usual therapy for serious enterococcal infection consisting of a synergistic combination of a penicillin or glycopeptide plus gentamicin. In the last eight months, the Antibiotic and Streptococcus Reference Laboratories at CPHL have examined 55 vancomycin-resistant enterococci (VRE) isolated from 36 patients in 11 hospitals across the UK. These isolates were predominantly from adults with serious underlying disease, and some belonged to clusters of nosocomial infection. During the preceding year, VRE were mostly confined to a few London hospitals.

Three classes of glycopeptide resistance are currently recognised in enterococci². The majority of the above VRE (35 *Enterococcus* [*Streptococcus*] *faecium*, two *E. [S.] faecalis* and one *E. [S.] avium*) were cross-resistant to teicoplanin and hybridised with a DNA probe specific for the *vanA* glycopeptide resistance gene. Seventeen VRE had low-level vancomycin resistance and were sensitive to teicoplanin *in vitro*. Of these, 14 *E. faecium* and one *E. faecalis* displayed the VanB phenotype and two *E. (S.) gallinarum* the VanC phenotype. Six VRE from three hospitals displayed high-level gentamicin resistance (MIC >1000 mg/l), but genetic linkage of vancomycin and gentamicin resistance determinants was not observed. All the *E. faecium* were resistant to ampicillin and penicillin (MIC >8 mg/l) and a range of other antimicrobials. None of the VRE produced beta-lactamase. The Antibiotic and Streptococcus Reference Laboratories will be pleased to receive isolates of vancomycin-resistant Gram-positive organisms for characterisation.

1. Moellering RC. Emergence of enterococcus as a significant pathogen. *Clin Infect Dis* 1992; **14**: 1173-8.
2. Shlaes DM, Etter L, Gutmann L. Synergistic killing of vancomycin-resistant enterococci of classes A, B and C by combinations of vancomycin, penicillin and gentamicin. *Antimicrob Agents Chemother* 1991; **35**: 776-9.

Escherichia coli O 157

A cluster of 27 cases of *Escherichia coli* O 157 infection with dates of onset from 3-28 June has been identified among people living in the Northampton area. Four of the cases have been admitted to hospital with haemolytic uraemic syndrome (HUS). Fifteen of the cases, including three with HUS, are less than five years of age and attend a day nursery. The mother and an older sibling of one of the children are also infected. The other ten cases consist of five children (including two siblings) aged less than five years of age (one of whom has HUS) and five adults, four of whom are elderly. These cases do not appear to be linked to the nursery or (apart from the siblings) with each other. There is one further case of HUS in whom *E. coli* O 157 infection has not been confirmed. The Division of Enteric Pathogens has identified 18 isolates as verotoxin-producing *E. coli* O 157 phage type 2. An investigation is underway to identify the vehicle of infection.

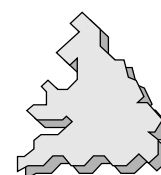
Respiratory tract infections:
weeks 92/23 - 26

Mycobacterial infections:
weeks 92/23 - 26

Bacteraemia and bacterial meningitis:
weeks 92/23 - 26

Unusual infections

Notice



Respiratory tract infections, England and Wales: laboratory reports, weeks 92/23 – 26

Laboratory reports	Number of reports received				Total reports 92/23-26	Average for weeks 23-26 (last 5 years)
	92/23	92/24	92/25	92/26		
Adenovirus (excluding EM faeces)	42	42	49	49	182	216 *
Coronavirus	1	–	2	–	3	4
Influenza A	4	3	38	2	47	23
Influenza B	2	2	1	–	5	30
Parainfluenza	28	31	32	21	112	95
RS virus	8	10	19	9	46	46
Rhinovirus	7	5	12	1	25	31

* average for last three years

Comment

Adenovirus (excluding EM faeces and Group F): 41 patients had eye infections, 8 had pneumonia and 4 had bronchiolitis.

Influenza A (27 single titres, 8 rising titres, 8 isolates, 3 microscopy and 1 not stated): 10 patients had pneumonia and one had bronchiolitis. M 5y had Guillain-Barré syndrome. Specimen dates for the 38 cases reported in week 25 were January and February of this year.

Influenza B (all single titres): 1 patient had pneumonia.

Parainfluenza: type 1, 2; type 2, 1; type 3, 102; untyped 7. Five patients had pneumonia, 19 had bronchiolitis, and 6 had croup. Five regions reported more than 10% of cases: Northern (21 cases), Trent (23), NW Thames (12), NE Thames (13) and S Western (14). 83% of patients were aged less than 5 years.

RS virus: 18 patients had bronchiolitis. 87% of patients were aged less than 5 years.

Rhinovirus: 1 patient had bronchiolitis.

Laboratory reports	Number of reports received				Total reports 92/23-26	Average for weeks 23-26 (last 5 years)
	92/23	92/24	92/25	92/26		
Chlamydia psittaci	9	7	9	9	34	35
Coxiella burnetii	–	4	6	3	13	16
Legionella pneumophila	–	2	2	6	10	NA
Mycoplasma pneumoniae	23	11	26	32	92	101

NA Not available

Chlamydia psittaci: 16 patients had pneumonia. Seven patients had contact with birds, including 3 with parrots and one with pigeons.

Coxiella burnetii: 7 patients had pneumonia. Two patients had contact with animals, including one who had contact

with camels and horses in Tunisia.

Legionella pneumophila: 8 males, 2 females (age range 29-62 years). Nine patients had pneumonia. Recent travel abroad 3: Far East 1, Majorca 1, Turkey 1. M 61y was part of an outbreak at an industrial site in Humberside.

Mycoplasma pneumoniae: 37 patients had pneumonia and 2 had bronchiolitis. M 7y, M 9y, M 58y, male, age not stated, and F 19y all had rashes.

Mycobacterial infections, England and Wales: laboratory reports, weeks 92/23 – 26

Mycobacterium tuberculosis 133: 66 males, 58 females, 9 sex not stated.

Pulmonary infections 95: 51 males, 40 females, 4 sex not stated. Twenty three patients were sputum smear positive. Four patients were aged less than 15 years and 22 were aged 65 years or more. M 1y, M 74y, M 78y, M 82y, F 76y and F 85y all died. There were 6 isolates from pleural aspirate and one from a lung biopsy.

Lymph nodes 14: 6 males, 7 females, 1 sex not stated. Three were from the Indian subcontinent.

Genitourinary 8: 5 males, 3 females.

Bone/joint 3: 2 males, 1 female.

Abdomen 3: 1 male, 1 female, 1 sex not stated.

Abscess 9: 2 males, 5 females, 2 sex not stated.

Skin 1: female.

M. bovis 3: M 75y and M 82y both had pulmonary infection; F 70y (urine).

M. kansasii 5: four males aged 72-79 years and F 63y all with pulmonary infection (2 sputum smear positive).

M. xenopi 2: M 65y and F 73y with pulmonary infection.

Avium-intracellulare group 10: M 17y (ear); M 32y (blood) and M 34y (bone marrow and bronchial specimens) both with AIDS; HIV-1 antibody positive M 39y (sputum smear positive), M 67y, M 79y and one patient 63y, sex not stated (sputum smear positive) all had pulmonary infection; F 3y, F 12y and female, age not stated, all had lymphadenopathy.

M. malmoense 3: M 68y, M 69y and M 74y all with pulmonary infection (1 sputum smear positive).

M. marinum 1: M 45y with skin infection (fish contact).

Bacteraemia and bacterial meningitis, England and Wales: weeks 92/23 – 26

Laboratory reports of blood and CSF isolates of bacteria are grouped into four categories and published in a weekly sequence:

1. Staphylococci and streptococci (excluding anaerobic cocci).
2. Enterobacteriaceae ie, *Citrobacter*, *Enterobacter*, *Escherichia coli*, *Klebsiella*, *Proteus* and *Salmonella species*.
3. Environmental and anaerobic bacteria ie, *Bacteroides*, *Clostridia*, *Acinetobacter*, *Aeromonas*, *Pseudomonas*, *Serratia* and anaerobic cocci.
4. *Neisseria meningitidis*, *Haemophilus species* and *Listeria monocytogenes*.

This week's CDR contains reports for category 1. Less commonly reported causes of bacteraemia or bacterial meningitis are listed under **Unusual infections**.

Laboratory reports	No. of reports received		Age		Total received	Cumulative total 1992
	blood only	CSF only or CSF & blood	<1m	≥65y		
Staphylococci						
S. aureus	372	6	12	156	378 (7) *	2535
Coagulase negative	197	9	18	55	206	1286
Streptococci						
group A	45	1	1	23	46	309
group B	48	5	25	8	53	361
group C & G	30	–	–	19	30	194
enterococci	139	5	7	69	144	821
α- and non-haemolytic	100	–	6	33	100	695
S. pneumoniae	190	18	4	106	208	2382

* methicillin-resistant strains of *Staphylococcus aureus*

Bacteraemia

Staphylococci:

S. aureus: 25 of 95 patients with IV-lines were on haemodialysis. Twenty-one patients had pneumonia. F 78y had lung abscess. Fifteen patients had UTI/GU surgery. Six elderly patients had joint prosthesis. Five patients aged 22-88 years were on CAPD. M 5y and F 1y had infection following chickenpox. Two women had infection following Caesarean section. M 31y was HIV-1 antibody positive. M 71y had scalded skin syndrome. Twelve methicillin-resistant strains were reported: Northern 1 (surgical wound and nose isolates); NW Thames 2 (both blood isolates); SE Thames 1 (blood isolate); SW Thames 2 (1 blood isolate, 1 surgical wound isolate); S Western 1 (blood isolate); Mersey 4 (1 wound and 3 nose isolates in a ward outbreak) and N Western 1 (blood and sputum isolates).

Also reported: M 29y (*Enterobacter cloacae* also isolated) and M 84y both with osteomyelitis (both bone isolates); F 48y with septic arthritis (synovial fluid isolate).

Coagulase negative: 3 of 120 patients with IV-lines were on haemodialysis. M 38y was HIV-1 antibody positive.

Also reported: F 1y with haemolytic uraemic syndrome (peritoneal dialysate isolate); F 59y with prosthetic heart valve (heart valve isolate).

Streptococci:

group A: 20 patients had skin infection, including F 3y with eczema herpeticum (blood isolate; *Staphylococcus aureus* also isolated) and M 10y with frontal sinusitis. M 4m with Gaucher's disease; F 1y with congenital heart disease and endocarditis; F 3y with pharyngitis and F 8y with osteomyelitis (both throat isolates also). M 65y and F 81y had joint prosthesis.

group B: 21 neonates. Five women had post partum infection. Three patients had skin infection, including diabetic M 38y with septic arthritis.

group C, 7 and group G, 23: 12 patients had skin infection; M 44y was on haemodialysis; M 77y had endocarditis; M 87y had prosthetic pacemaker.

Also reported: M 82y with skin infection and septic arthritis (skin and joint isolates).

enterococci: *S. avium* 1; *S. bovis* 10; *S. durans* 1; *S. equinus* 1; *S. faecalis* 64; *S. faecium* 19. Twenty-one patients had UTI/GU surgery. Twelve patients had biliary tract disease/surgery. M 29y had burns; M 66y was on haemodialysis; M 74y was on CAPD (blood isolate; *Enterobacter agglomerans* and *Escherichia coli* also isolated). F 81y had infected vascular graft (blood isolate; *Proteus morgani* also isolated).

α- and non-haemolytic: *S. acidominimus* 1; *S. cremoris* 2; *S. milleri* 17; *S. mitis* 12; *S. morbillorum* 2; *S. mutans* 2; *S. salivarius* 3; *S. sanguis* 50. Three patients had biliary tract disease/surgery. *S. milleri*, 3 patients aged 44-59 years had endocarditis. M 57y (blood isolate; *Bacteroides sp* also isolated) and F 49y (blood and pus isolates; *Bacteroides fragilis* also isolated) both had liver abscess. F 83y had pyelonephritis. *S. sanguis*, M 62y on haemodialysis (blood isolate; *Proteus morgani* also isolated).

Also reported: *S. salivarius*, M 51y (peritoneal dialysate isolate).

S. pneumoniae: 106 patients had pneumonia, including 4 children aged less than 4 years and F 68y with fibrosing alveolitis. M 1y had orbital cellulitis; M 2y and female, age not stated, both had otitis media; M 80y and female, age not

stated, both had previous splenectomy; F 25y had septic abortion; F 26y had peritonitis; F 76y had epiglottitis. Seventeen patients were immunocompromised, including 3 with lymphoma, 3 with leukaemia, 2 with myeloma, 2

with organ transplants, 2 with disseminated carcinoma and 3 on chemotherapy. M 38y and patient, age and sex not stated, were both HIV-1 antibody positive.

Laboratory reports	Total bacteraemia	Acute bone/joint	Age		IV/CVP lines	Pace-makers	Endocarditis (with prostheses)	IVDA (with endocarditis)
			<15y	≥65y				
Staphylococci								
S. aureus	372	31	10	11	95	13	19 (8)	4 (-)
Coagulase negative	197	-	-	-	120	1	6 (2)	-
Streptococci								
group A	45	2	1	1	-	-	1 (-)	-
group B	48	2	-	-	3	-	1 (-)	-
group C & G	30	2	-	2	2	1	1 (-)	-
enterococci	139	-	-	-	31	-	9 (-)	1 (-)
α- and non-haemolytic	100	-	-	-	9	1	32 (3)	3 (1)
S. pneumoniae	190	1	-	-	2	-	-	-

Meningitis

Staphylococci:

S. aureus: 5 patients aged 1 day - 11 years had infection following neurosurgery (all CSF isolates); F 37y (blood and CSF isolates).

Coagulase negative: 8 patients aged 1 month - 22 years with CSF shunts, including M 3y (blood isolate only), F 1m and F 1y (both shunt isolates also). M 23y had infection following mastoidectomy and male, age not stated, had leukaemia (both CSF isolates).

Streptococci:

group A: M 4y with CSF shunt.

group B: M 23d, F 1d and F 24d (all blood and CSF isolates); F 16d and F 19d (both CSF isolates); M 14d and M 77y had meningitis with no CSF isolate (both blood isolates).

S. faecalis: M 3m and M 5y with CSF shunts; M 70y following spinal anaesthesia for GU surgery; F 10m.

S. faecium: F 57y with renal transplant.

S. milleri: F 2y with congenital heart disease had brain abscess and M 50y had extradural empyema (both pus isolates).

S. pneumoniae: F 5m had infection following neurosurgery and M 54y had infection following nasal polypectomy (both blood and CSF isolates). M 6m following cardiac surgery (blood, CSF and sputum isolates). Seven patients aged 4 months - 23 years (blood and CSF isolates). Six patients aged 1 month - 70 years, including F 48y with otitis media (all CSF isolates). M 45y had endocarditis (PM brain isolate). F 58y (blood and PM brain isolates). Ten patients aged 1 month - 70 years had meningitis with no CSF isolate (all blood isolates).

Unusual infections

Bacillus sp: *B. cereus*, M 24y (blood isolate). *B. circulans*, F 71y with prosthetic joint (joint isolate).

Gardnerella vaginalis: F 19y had post partum infection (blood isolate).

Providencia sp 2: *P. alcalifaciens*, male, age not stated (blood isolate). *P. rettgeri*, M 83y had urinary tract infection (blood and urine isolates).

Berzelius symposium

The Berzelius symposium on water and public health will be held at the Royal Society of Medicine from 7-9 September 1992. Topics covered include water, epidemiology and public health; reviews of various waterborne outbreaks, and discussions about the quality of water supplies. The fee is £225 for fellows of the Royal Society of Medicine and £250 for non-fellows and includes a dinner on Monday 7 September. A daily rate of £75 is also available plus an optional £50 for the dinner. Further details can be obtained from Ms Samantha Greshoff, The Berzelius Symposium, Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE (telephone 071 408 2119, ext 336).

Data are for England and Wales only, unless otherwise stated.
Weekly numbers are provisional and should not be used to indicate trends.