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BSAC Respiratory Resistance Surveillance Update 2005-06

rreynolds@bsac.org.uk

R. Reynolds[1], D. Felmingham[2], L. Williams[2] and The BSAC Extended Working Party on Respiratory Resistance Surveillance[1]

[1]British Society for Antimicrobial Chemotherapy, Birmingham, B1 2JS [2]GR Micro Limited, London, NW1 3ER

Introduction & Methods

The BSAC Respiratory Resistance Surveillance Programme monitors resistance in community-acquired lower respiratory tract isolates, excluding duplicates, cystic fibrosis and patients in hospital > 48 hours.

Since 1999-2000, a total of 31 centres have contributed 5083 *S. pneumoniae*, 6465 *H. influenzae* and 2941 *M. catarrhalis;* 22 centres contributed in 2005-06. Isolates are centrally tested by BSAC MIC methods.

Results

Graphs show percentage non-susceptibility or resistance to class-representative antibiotics for each winter. Tables show percentage susceptible (S), intermediate (I) and resistant (R), and MIC summary measures for all antimicrobials tested in 2005-06.

There was little evidence of trend in resistance over time. Non-susceptibility in *S. pneumoniae* and β-lactamase production in *H. influenzae* was more prevalent in Ireland than in Great Britain, though centres in Ireland were few. Non-susceptibilities to ertapenem and penicillin were associated in *S. pneumoniae*. Tigecycline (and, usually, minocycline) overcame resistance to tetracycline.

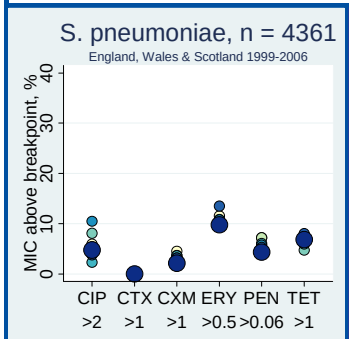
Conclusions

The results provide valuable data for consideration when choosing empirical therapy for the treatment of community-acquired lower respiratory tract infection.

Antimicrobial abbreviations

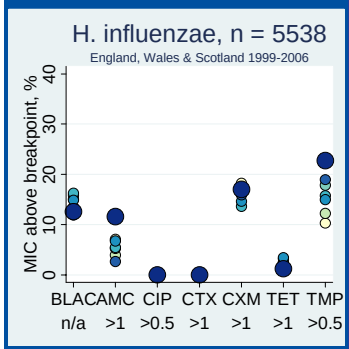
AMC amoxicillin-clavulanate, AMP ampicillin, AMX amoxicillin, CIP ciprofloxacin, CLI clindamycin, CTX cefotaxime, CXM cefuroxime, ERY erythromycin, ETP ertapenem, MIN minocycline, PEN penicillin, TET tetracycline, TGC tigecycline, TMP trimethoprim

ENGLAND, WALES AND SCOTLAND



S. pneumoniae 2005-06 (n = 645)

Agent	MIC_{50}	MIC_{90}	%S	%I	%R
AMX	0.015	0.03			
CIP	1	2		95.2	4.8
CLI	0.12	0.25			
CTX	0.008	0.03	100		0
CXM	0.015	0.06	97.8		2.2
ERY	0.12	0.25	90.2		9.8
ETP	0.008	0.015	95.7	4.3	
MIN	0.06	0.12			
PEN	0.008	0.015	95.7	4.3	0
TET	0.12	0.25	93.2		6.8
TGC	0.06	0.12			
TMP	4	8			



H. influenzae 2005-06 (n = 812)
β-lactamase = 12.6%

Agent	MIC_{50}	MIC_{90}	%S	%I	%R
AMC	0.5	2	88.4		11.6
AMP	0.25	8	86.7		13.3
AMX	0.5	8	71.6		28.4
CIP	0.008	0.015	100		0
CTX	0.015	0.06	100		0
CXM	0.5	2	83.0		17.0
ERY	4	16	1.0	88.8	10.2
ETP	0.03	0.12	100		0
MIN	0.5	1			
TET	0.5	0.5	98.8		1.2
TGC	0.25	0.5			
TMP	0.25	64	77.2		22.8

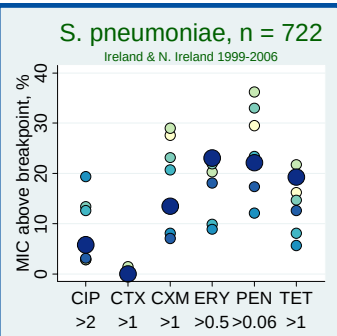
***M. catarrhalis*, n = 2496**
England, Wales & Scotland 1999 – 2006

β-Lactamase varied between 91 and 96%, and CXM-NS between 19 and 47% over the 7 winters. Non-susceptibility to AMC, CIP, ERY and TET was below 1% in every winter.

M. catarrhalis 2005-06 (n = 357)
β-lactamase = 95.5%

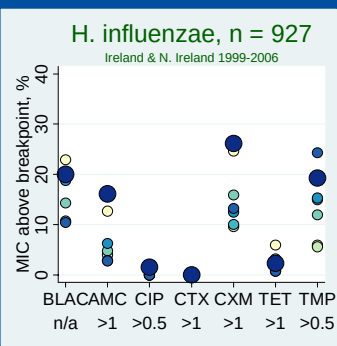
Agent	MIC_{50}	MIC_{90}	%S	%I	%R
AMC	0.25	0.25	100		0
CIP	0.03	0.03	99.7		0.3
CXM	1	2	81.0		19.0
ERY	0.06	0.06	99.2		0.8
ETP	0.015	0.015	100		0
MIN	0.12	0.12			
TET	0.5	0.5	100		0
TGC	0.06	0.06			

IRELAND AND NORTHERN IRELAND



S. pneumoniae 2005-06 (n = 104)

Agent	MIC_{50}	MIC_{90}	%S	%I	%R
AMX	0.008	1			
CIP	1	2		94.2	5.8
CLI	0.12	>2			
CTX	0.008	0.5	100		0
CXM	0.015	2	86.5		13.5
ERY	0.12	>16	76.9		23.1
ETP	0.008	0.25	77.9	22.1	
MIN	0.06	8			
PEN	0.008	0.5	77.9	22.1	0
TET	0.12	>16	80.8		19.2
TGC	0.06	0.12			
TMP	8	>32			



H. influenzae 2005-06 (n = 130)
β-lactamase = 20%

Agent	MIC_{50}	MIC_{90}	%S	%I	%R
AMC	0.5	2	83.8		16.2
AMP	0.25	8	78.5		21.5
AMX	1	16	62.3		37.7
CIP	0.008	0.015	98.5		1.5
CTX	0.015	0.06	100		0
CXM	0.5	2	73.8		26.2
ERY	4	16	0.8	86.9	12.3
ETP	0.03	0.12	100		0
MIN	0.5	1			
TET	0.5	0.5	97.7		2.3
TGC	0.25	0.5			
TMP	0.12	64	80.8		19.2

***M. catarrhalis*, n = 445**
Ireland & N. Ireland 1999 – 2006

β-Lactamase varied between 85 and 93%, and CXM-NS between 19 and 62% over the 7 winters. Non-susceptibility to AMC, CIP, ERY and TET was not seen in any winter.

M. catarrhalis 2005-06 (n = 58)
β-lactamase = 93%

Agent	MIC_{50}	MIC_{90}	%S	%I	%R
AMC	0.25	0.25	100		0
CIP	0.03	0.03	100		0
CXM	1	2	81		19
ERY	0.06	0.06	100		0
ETP	0.008	0.015	100		0
MIN	0.12	0.12			
TET	0.25	0.5	100		0
TGC	0.06	0.06			

KEY to graphs: 1999-2000 2000-01 2001-02 2002-03 2003-04 2004-05 2005-06

Working Party Members (November 2006): A. MacGowan[1] (Chair), M. Allen[2], D. Brown[3], N. Deaney[4], D. Felmingham[5], Lewis[6], D. Livermore[7], R. Reynolds[1], C. Thomson[8] , A. White[9] , L. Williams[5].

Organism ID and Susceptibility Testing: L. Williams[5], J. Shackcloth[5], and staff at GR Micro[5].

[1]North Bristol NHS Trust ; [2]Wyeth; [3]Addenbrookes Hospital, Cambridge; [4]Merck, Sharp & Dohme ; [5]GR Micro, London ; [6]HPA South West; [7]Health Protection Agency, London; [8]IMS Health; [9]consultant.

Central Laboratory: GR Micro Ltd, London.

Collecting Laboratories: *England*: City H., Birmingham; Manor H., Birmingham, New Cross H., Birmingham; Southmead H., Bristol, Addenbrookes H., Cambridge, Queen Elizabeth H., Gateshead; Leeds General I.; St James's H., Leeds; Royal I., Leicester; Liverpool University H.; St Bartholomew's & Royal H., London; University College H., London; Hope H., Manchester; Freeman H., Newcastle; Royal Victoria I., Newcastle; Derriford H., Plymouth; Southampton General H.; Sunderland Royal I.. *Ireland*: Beaumont H., Dublin; Meath, Adelaide & Children's H., Dublin; St Vincent's H., Dublin; University College H., Galway. *N. Ireland*: Royal H., Belfast; Ulster H., Belfast. *Scotland*: Royal I., Aberdeen; Glasgow Royal I.; New Royal I., Edinburgh; Western General H., Edinburgh; Southern General H., Glasgow. *Wales*: University H., Cardiff; Wrexham Maelor H. [H.= Hospital, I.=Infirmary]

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