Bugs & Drugs

NHS Grampian

Changes to Microbiology Antibiotic Susceptibility Reporting

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Reporting of antibiotic susceptibilities from the microbiology laboratory is changing in line with the European Committee on Antimicrobial Susceptibility Testing (EUCAST) recommendations.[1]

These changes refer to targeted therapy where an organism has been identified and the microbiology laboratory have reported antibiotic sensitivities. For antibiotic treatment where the organism is not yet known, please refer to the appropriate empirical guideline.

- Please consider whether treatment is required if results are reported from a *non-sterile* site.
- Antibiotics reported as **Increased dose required** are appropriate treatment options when given at the correct dose.
- Increased dosage regimens for ADULTS for antibiotics are listed in table 1 on page 2.
- For advice on increased doses in PAEDIATRICS please seek advice from the duty microbiologist, paediatric infection specialist, RACH pharmacists or the antimicrobial pharmacists.
- Standard statements will be added to microbiology reports with a link to this dosing guidance.
- *Pseudomonas aeruginosa*, for many antibiotics will never be reported 'Sensitive', only 'Increased dose required', but it is still possible to treat providing the dosing and mode of administration is considered.
- Refer to the https://bnf.nice.org.uk/ and www.medicines.org.uk for advice on dosing in patients with renal or hepatic impairment but take into account the higher dose required to treat these organisms effectively.
- For more background information please refer to the learning resource on TURAS Learn at https://learn.nes.nhs.scot/65396.
- If you have any queries please contact either the duty microbiologist via switchboard or the antimicrobial pharmacists on bleep 3933 or gram.antibioticpharmacists@nhs.scot.

Approved by the Antimicrobial Management Team November 2022

Table 1: Dosing Guidance for ADULTS for antibiotics reported as **Increased dose required**

Organism	Drug	Increased Dose for Adults	Comments
Enterobacterales *(E. coli, Klebsiella sp, Raoultella sp, P. mirabilis)*	Cefuroxime IV	1.5g 8 hourly	1.5g 6 hourly dosing may be required in patients with BMI ≥ 30 kg/m2 or life-threatening or less susceptible infections
Enterobacterales *(E. coli, Klebsiella sp, Raoultella sp, P. mirabilis)*	Temocillin IV	2g 8 hourly	Use is restricted locally – refer to Alert Antimicrobial Guidance.
Pseudomonas spp	Piperacillin/ tazobactam IV	4.5 g 6 hourly 3 hour infusion is recommended in critical illness - refer to extended infusion guidance.	Use is restricted locally - refer to Alert Antimicrobial Guidance
	Ceftazidime IV	2 g 8 hourly	Use is restricted locally - refer to Alert Antimicrobial Guidance BNF states for pseudomonal lung infection in patients with cystic fibrosis; 100–150 mg/kg daily in 3 divided doses; maximum 9 g per day.
	Aztreonam IV	2g 6 hourly	Use is restricted locally – refer to Alert Antimicrobial Guidance. Not recommended locally for treatment of *Pseudomonas spp* unless advised by micro/ID.
Pseudomonas spp/ *Acinetobacter* spp	Ciprofloxacin IV	400mg 8 hourly	
	Ciprofloxacin Oral	750mg 12 hourly	
S. maltophilia	Co-trimoxazole IV/Oral	1440mg 12 hourly except in urinary tract infections: 960mg 12 hourly	Seek advice from an infection specialist, treatment may not always be required. Although not included in BNF/SPC, the dose recommended in some Scottish centres and quoted in international dosing reference sources is higher i.e. 90-120mg/kg/day in 2-4 divided doses.[3]
H. influenzae	Amoxicillin Oral	1g 8 hourly	
	Co-amoxiclav Oral	Co-amoxiclav 625mg 8 hourly **+** Amoxicillin 500mg 8 hourly	Co-amoxiclav should only be used if the organism shows resistance to other agents eg amoxicillin/ doxycycline.
Streptococcus groups A/B/C/G & *S. pneumoniae*	Levofloxacin IV/Oral	500mg 12 hourly	Use is restricted locally – refer to Alert Antimicrobial Guidance.

References

1 European Society of Clinical Microbiology and Infectious Diseases. EUCAST Clinical Breakpoints and dosing of antibiotics. Version 12. European Committee on Antimicrobial Susceptibility Testing, Jan 2022. https://eucast.org/clinical_breakpoints/

2 Scottish Antimicrobial Prescribing Group. Changes to antibiotic susceptibility reporting from microbiology laboratories. January 2022 https://www.sapg.scot/guidance-qi-tools/antimicrobial-specific-guidance/eucast-changes/

3 Infectious Diseases Society of America (IDSA) Guidance on the Treatment of Antimicrobial-Resistant Gram-Negative Infections: Version 2.0. Published 03/31/2022. https://www.idsociety.org/practice-guideline/amr-guidance-2.0/