

# Chronic Osteomyelitis of Upper and Lower Limbs in Adults - Microbiology Summary Clinical Guideline

Reference number: CG-ANTI/2019/065

Clinical concerns re chronic osteomyelitis

## Investigation

- Radiology:
  - First line: XR

No clinical concerns regarding sepsis

## Investigation

- Microbiology:
  - Biopsy for MC&S
  - Wound swab
  - MRSA screen
  - ± Blood cultures x 2
- Blood sciences:
  - FBC, ESR, CRP, U&Es, and LFTs

## Treatment

- Collaborate with the surgical team regarding intervention
- Empiric, intravenous antibiotics (please note, page 2)

Clinical concerns regarding sepsis

## Investigation

- Microbiology:
  - Blood cultures x 2
  - Wound swab
  - MRSA screen
- Blood sciences:
  - FBC, ESR, CRP, lactate, U&Es, and LFTs

## Treatment

- Empiric, intravenous antibiotics (please note, page 2)

## Treatment

- Collaborate with the surgical team regarding intervention

## Investigation

- Microbiology:
  - Biopsy

Directed antibiotics with culture and susceptibilities (please note, microbiology full clinical guideline, pages 3-5)

**Empiric, intravenous antibiotics: no clinical concerns regarding sepsis**

|             | No history of MRSA   | History of MRSA  |
|-------------|--|--|
| First line  | Flucloxacillin 2 g 6 hourly  | Vancomycin or teicoplanin, <a href="#">dose as per hospital guidelines</a> , vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l |
| Second line | <a href="#">If non-immediate without systemic involvement penicillin allergy</a> , cefuroxime 1.5 g 8 hourly   | Daptomycin 6 mg/kg 24 hourly   |
| Third line  | <a href="#">If immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy</a> , vancomycin or teicoplanin, <a href="#">dose as per hospital guidelines</a> , vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l | Linezolid 600 mg 12 hourly (or per oral [absorption 100%])   |

**Empiric, intravenous antibiotics: clinical concerns regarding **sepsis** (life threatening organ dysfunction caused by a dysregulated host immune response to infection) secondary to osteomyelitis**

|   |   |
|---|---|
| First line  | Piperacillin tazobactam 4.5 g 6 hourly ±<br>If there are clinical concerns regarding the risk of MRSA, vancomycin or teicoplanin, <a href="#">dose as per hospital guidelines</a> , vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l |
| Second line, <a href="#">if non-immediate without systemic involvement penicillin allergy</a>                           | Ceftazidime 2 g 8 hourly <b>and</b><br>Vancomycin or teicoplanin, <a href="#">dose as per hospital guidelines</a> , vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l   |
| Third line, <a href="#">if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy</a> | Ciprofloxacin 400 mg 8 hourly <b>and</b><br>Vancomycin or teicoplanin, <a href="#">dose as per hospital guidelines</a> , vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l  |

## References

- Bennett, J. E., Dolin, R., and Blaser, M. J.** 2015. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 8<sup>th</sup> Edition. Elsevier.
- emc.** 2022. Available at: <https://www.medicines.org.uk/emc/>.
- Grayson, M. L., Crowe, S. M., McCarthy, J. S., Mills, J., Mouton, J. W., Norrby, S. R., Paterson, D. L., and Pfaller, M. A.** 2010. Kucers' The Use Of Antibiotics, 6<sup>th</sup> Edition. CRC Press.
- Li, H. -K., Rombach, I., Zambellas, R., Walker, A. S., McNally, M. A., Atkins, B. L., Lipsky, B. A., Hughes, H. C., Bose, D., Kumin, M., Scarborough, C., Matthews, P. C., Brent, A. J., Lomas, J., Gundle, R., Rogers, M., Taylor, A., Angus, B., Byren, I., Berendt, A. R., Warren, S., Fitzgerald, F. E., Mack, D. J. F., Hopkins, S., Folb, J., Reynolds, H. E., Moore, E., Marshall, J., Jenkins, N., Moran, C. E., Woodhouse, A. F., Stafford, S., Seaton, R. A., Vallance, C., Hemsley, C. J., Bisnauthsing, K., Sandoe, J. A. T., Aggarwal, I., Ellis, S. C., Bunn, D. J., Sutherland, R. K., Barlow, G., Cooper, C., Geue, C., McMeekin, N., Briggs, A. H., Sendi, P., Khatamzas, E., Wangrangsimakul, T., Wong, T. H. N., Barrett, L. K., Alvand, A., Old, C. F., Bostock, J., Paul, J., Cooke, G., Thwaites, G. E., Bejon, P., and Scarborough, M.** 2019. Oral versus Intravenous Antibiotics for Bone and Joint Infection. The New England Journal of Medicine.
- Sanford Guide Antimicrobial Therapy.** 2022. Available at: <https://www.sanfordguide.com/products/digital-subscriptions/>.
- Zimmerli, W.** 2021. Bone and Joint Infections, 2<sup>nd</sup> Edition. WILEY Blackwell.

## Document control

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