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P1904 Activity of temocillin against a collection of *Escherichia coli* and *Klebsiella pneumoniae* from bloodstream isolates non-susceptible to ceftriaxone

Andrew Henderson*[1,2], Paul Tambyah[3], David Lye[4,5], Mesut Yilmaz[6], Thamer Alenazi[7], Matteo Bassetti[8], Elda Righi[8], Benjamin Rogers[9,10,10], Souha S. Kanj[11,11], Hasan Bhally[12], Jon Iredell[13,14], Marc Mendelson[15], David Looke[1,16], Spiros Miyakis[17,18,19], Genevieve Walls[20], Amy Crowe[21], Paul Ingram[22,23,24,24], Nick Daneman[25], Paul Griffin[16,26,27], Eugene Athan[28], Michelle Bauer[2], Kyra Cottrell[2], Ernest Tan[2], Leah Roberts[29], Scott Beatson[29], Anton Peleg[30,31,31], Tiffany Harris-Brown[2], David L. Paterson[2,32], Patrick Harris[2,33]

[1] Infection Management Services, Princess Alexandra Hospital, [2] Centre for Clinical Research, University of Queensland, [3] Department of Infectious Diseases, National University Hospital, [4] Yong Loo Lin School of Medicine, National University of Singapore, [5] Department of Infectious Diseases, Institute of Infectious Diseases and Epidemiology, Tan Tock Seng Hospital, [6] Department of Infectious Diseases and Clinical Microbiology, Istanbul Medipol University, [7] King Saud Bin Abdulaziz University for Health Sciences and King Abdullah International Medical Research Center, [8] Infectious Diseases Clinic, Department of Medicine University of Udine and Santa Maria Misericordia Hospital, [9] Centre for Inflammatory Diseases, Monash University, [10] Monash Infectious Diseases, Monash Health, [11] Department of Internal Medicine, Division of Infectious Diseases, American University of Beirut Medical Center, [12] Department of Medicine and Infectious Diseases, North Shore Hospital, [13] Marie Bashir Institute for Infectious Disease and Biosecurity, University of Sydney, [14] Centre for Infectious Diseases and Microbiology, Westmead Hospital, [15] Division of Infectious Diseases & HIV Medicine, Groote Schuur Hospital, University of Cape Town, [16] University of Queensland, [17] School of Medicine, University of Wollongong, [18] Illawarra Health and Medical Research Institute, [19] Department of Infectious Diseases, Wollongong Hospital, [20] Department of Infectious Diseases, Middlemore Hospital, [21] Department of Infectious Diseases, Department of Microbiology, St Vincent's Hospital, [22] School of Pathology and Laboratory Medicine, The University of Western Australia, [23] Department of Infectious Diseases, Fiona Stanley Hospital, [24] Department of Microbiology, PathWest Laboratory Medicine, [25] Sunnybrook Health Sciences Centre, University of Toronto, [26] Department of Infectious Diseases, Mater Hospital and Mater Medical Research Institute, [27] QIMR Berghofer, [28] Department of Infectious Diseases, Barwon Health and Deakin University, [29] School of Chemistry and Molecular Biosciences, University of Queensland, [30] Infection & Immunity Program, Biomedicine Discovery Institute & Department of Microbiology, Monash University, [31] Department of Infectious Diseases, Alfred Hospital and Central Clinical School, Monash Health, [32] Department of Infectious Diseases, Royal Brisbane and Women's Hospital, [33] Department of Microbiology, Pathology Queensland

Background: Temocillin (TMO) is a beta-lactam antimicrobial frequently used in some European countries for treatment of MDR Enterobacteriaciae due to it's stability against ESBL and ampC enzymes. Although there are no current EUCAST susceptibility breakpoints, BSAC guidelines have recommended susceptible breakpoints for standard infections and urinary tract infections. In this study, we aimed to determine the rate of susceptibility to TMO in isolates with characterized resistance mechanisms collected from the MERINO trial, a randomized controlled trial of bloodstream infections due to *E. coli* and *K. pneumoniae* non-susceptible to ceftriaxone.

Materials/methods: Minimum Inhibitory Concentration (MIC) testing was performed by broth microdilution (BMD) using custom made Sensititre plates (Thermo Fisher) with a TMO range between 2 µg/ml and 128 µg/ml.

Isolates were assessed as susceptible by BSAC guidelines for standard (≤ 8 µg/ml) and uncomplicated UTI infections (≤ 32 µg/ml). Resistome characterisation was performed by Illumina sequencing with antibiotic resistance genes detected using assemblies performed using Spades (v3.9.0) and Abricate (v0.8) against the ResFinder and ARG-ANNOT databases (accessed 25th April, 2018).

Results: 302 isolates were included from patients enrolled in the MERINO trial, representing the initial blood culture isolate for each patient. At the standard and UTI BSAC breakpoints 80.5% and 98.3% of isolates were susceptible. Furthermore, no significant difference between susceptibility rates were identified for ESBLs or ampC harbouring organisms at standard (80.3% vs 81.8%) and UTI breakpoints (99.2% vs 93.9%) or for any particular ESBL or ampC gene identified.

Conclusions: TMO remains a potential carbapenem sparing agent for isolates non-susceptible to ceftriaxone. However, at the BSAC standard breakpoint of ≤ 8 µg/ml, a significant proportion of isolates are categorised as non-susceptible, compared to the UTI breakpoint of ≤ 32 µg/ml where almost all isolates are categorised as susceptible. Further work is required to determine clinically appropriate breakpoints.