



Pan drug-resistant *Serratia marcescens*: An emerging threat

To the Editor: The five most frequently reported organisms isolated from blood cultures worldwide are *Klebsiella pneumoniae*, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Enterococcus* species.^[1,2] The emergence of carbapenem resistance has seriously compromised treatment options for organisms such as *K. pneumoniae*, *E. coli* and other Enterobacteriaceae such as *Enterobacter* species and *Serratia marcescens*. Colistin and tigecycline are last-resort therapeutic options for these carbapenem-resistant Enterobacteriaceae.^[3]

We have observed an increase in the number of carbapenem-resistant *S. marcescens* isolates in blood cultures in our laboratory in the KwaZulu-Natal (KZN) region, South Africa, which is particularly worrisome, given that *Serratia* species are inherently resistant to colistin.

During 2017, *S. marcescens* was the 6th most common isolate in blood cultures. Of the 572 Enterobacteriaceae isolated from blood cultures, *S. marcescens* was the 3rd most common after *E. coli* and *K. pneumoniae*, accounting for 11% (63/572) of isolates. Ten *S. marcescens* isolates were carbapenem resistant; 7 of these were also resistant to tigecycline, thus making them pan drug resistant. All the carbapenem-resistant *S. marcescens* isolates carried the New Delhi metallo-beta-lactamase 1 (*NDM-1*) gene. Unlike other reports of *S. marcescens* bacteraemia, these isolates were from several different hospitals across KZN and were not linked to an outbreak.^[4,5]

The emergence of pan drug-resistant *S. marcescens* in blood cultures in this region creates a challenge for the management of patients admitted to hospitals and intensive care units. Implementation of antimicrobial stewardship and strict infection control practices is imperative to prevent further dissemination of this formidable pathogen.

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S Afr Med J 2018;108(4):251. DOI:10.7196/SAMJ.2018.v108i4.13159