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De-escalation in severe sepsis: still an important part of our armamentarium against antimicrobial resistance

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Dear Editor,

Antibiotic resistance is rampant in today's world; various strategies are being adopted to fight this resistance. These include hand hygiene, contact precautions, isolation of colonized patients and surveillance [1]. Apart from these the Surviving Sepsis Campaign guidelines recommend a strategy based on de-escalation of antibiotics as soon as antimicrobial susceptibility results are available [2]. This is supported by large observational studies. Such a strategy was tested for the first time in a randomized clinical trial; however, the current study did not confirm the findings of earlier observational studies [3].

The basis of the antibiotic selection for de-escalation needs to be better defined. The de-escalation should be done on the basis of available antibiograms with the minimum inhibitory concentration (MIC) of each antibiotic against that organism. The antibiotic with the lowest MIC should be picked up and started. Significantly more patients in the de-

escalation group, prior to de-escalation, were on carbapenems (39 %) as compared to the continuation group (17 %) ($p = 0.01$). The patients in the de-escalation group were eventually downgraded to ceftriaxone ($n = 8$) and aminopenicillin ($n = 8$) i.e. 16 out of a total of 24 (80 %) [3]. This de-escalation should have been on the basis of an antibiotic with a lower MIC and would have resulted in lower risk of superinfection in the de-escalation group.

De-escalation is less frequently accomplished in surgical patients as compared to medical patients because the surgical infections are frequently polymicrobial. Thirty-nine per cent of patients in the de-escalation group had undergone some form of surgery as compared to 29 % in the continuation group [3]. Postoperative patients are prone to complications, commonly lung infection, as was also reflected in the current study (57 % in the de-escalation group vs 29 % in the control group). This could have resulted in longer ICU stay in patients in the de-escalation group. Overall better matched groups with involvement of only medical or surgical patients should have been taken. The study by Garnacho-Montero et al. [4] also found that benefits with antibiotic de-escalation therapy are less frequently accomplished in surgical patients than medical patients. The surgical infections (i.e. peritonitis or soft tissue infections) are commonly polymicrobial, which may explain the difficulties in reducing or narrowing the antimicrobial spectrum.

We believe that de-escalation is an important part of our armamentarium against emergence of multidrug-resistant pathogens and it should not be discarded on the basis of a single randomized control trial. A large multicentre trial with inclusion of

better matched groups of either medical or surgical patients and de-escalation to an antibiotic with a lower MIC would have provided stronger inferences.

Conflicts of interest There is no conflict of interest.

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