Comment on: Emergence of multidrug-resistant Gram-negative bacteria during selective decontamination of the digestive tract on an intensive care unit

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Sir,

We read with interest the paper by Al Naiemi et al.1 claiming a link between the emergence of aerobic Gram-negative bacilli (AGNB), producing extended-spectrum β-lactamase (ESBL), and selective decontamination of the digestive tract (SDD). In particular, the parenteral component of SDD, cefotaxime, is considered a risk factor for the emergence of strains carrying ESBL.1 The authors concluded that they had identified an outbreak of plasmid-mediated ESBL genes during SDD treatment, presumably by horizontal transfer, although there is no clear evidence of transmission of different strains among the patients. It appears that all the evidence of a link with SDD is, at best, circumstantial.

There are many reports describing endemicity of ESBL-producing AGNB in intensive care units that do not use SDD.2,3 Additionally, the use of most parenteral antimicrobials that suppress the patient’s indigenous gut flora has been shown to promote the subsequent overgrowth of ESBL-producing AGNB in the gut.2,3

Unfortunately, Al Naiemi et al. have omitted the basic demographic data, which would allow us to appreciate the magnitude of the endemicity of the ESBL-producing AGNB. Only four patients were involved, each of them carried a different strain and only one of the patients became infected. The impact of polymyxin E/tobramycin on the abnormal carrier state of ESBL-producing AGNB was not reported.

We believe that the issue is not the parenteral component, cefotaxime, but the susceptibility of the ESBL-producing AGNB to the enteral aminoglycoside component of SDD, tobramycin. Polymyxin E alone has not been shown to successfully clear AGNB, irrespective of their resistance pattern.4 All ESBL-producing AGNB isolated within the first week of admission were resistant to tobramycin. This suggests that they were present in the patient prior to admission, despite not being detected in the admission surveillance. SDD is considered to be effective only if surveillance cultures show the eradication of all AGNB.4,5 Two enteral antimicrobials, which are active against ESBL, are required to successfully decontaminate patients.5 If the ESBL-producing AGNB are resistant to tobramycin, there is a need to adjust SDD therapy.5 Neomycin6 and paromomycin have been successfully used as replacements for tobramycin. The ICU in Getafe (Madrid) experienced an episode of endemicity of carriage and infection due to a multiresistant Serratia. The strain was resistant to the enteral antimicrobials, polymyxin E and tobramycin. Both were discontinued and replaced by paromomycin. Endemicity was controlled within a week.

When a macrolide was added to polymyxin E, the combination failed to render the critically ill patient free of ESBL-producing AGNB, as these organisms were resistant to erythromycin.2

The traditional enteral polymyxin E/tobramycin combination is not a panacea and would need to be modified in the case of endemicity of ESBL-producing, tobramycin-resistant AGNB.5

Transparency declarations

None to declare.

References


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