Correspondence

Selective digestive decontamination saves lives whilst preventing resistance

Sir,

We read the review by Keyt et al on the prevention of ventilator-associated pneumonia (VAP) in the intensive care unit. Although comprehensive, we believe that the issues of selective digestive decontamination (SDD) and selective oropharyngeal contamination (SOD) were not properly covered.

The authors claimed that the techniques showed modest reductions in mortality in reviews and meta-analyses. However, a meta-analysis of randomized controlled trials (RCTs) using the full SDD protocol of enteral and parenteral antimicrobials showed a 29 per cent reduction in mortality [odds ratio (OR) 0.71, 95% confidence interval (CI) 0.61-0.82]; 18 patients needed to be treated with SDD to prevent one death. The mortality reduction was 42 per cent in RCTs where SDD eradicated the carrier state (OR 0.58, 95% CI 0.45-0.77)\(^2\). These results are consistent with those of the Cochrane meta-analysis showing a 25 per cent reduction in mortality (OR 0.75 95% CI 0.65-0.87) in patients receiving SDD\(^3\). In a Dutch RCT including about 1000 patients, the risk of mortality was reduced by 40 per cent in the unit where SDD was administered to all patients (OR 0.6; 95% CI 0.4-0.8)\(^4\). In a cluster-randomized cross-over study\(^5\) of 5939 patients, both SDD and SOD were associated with significant relative reductions in death of 13 and 11 per cent, respectively [OR 0.83 (P=0.02), and 0.86 (P=0.045), respectively] compared with standard care. All these reductions in mortality cannot be simply dismissed as “modest”.

The authors do not recommend SDD or SOD for VAP prevention due to concern for emergence of antibiotic resistance. Their statement is based on the ecological point-prevalence survey\(^6\) in which all patients in the unit, whether enrolled or not in the principal study\(^5\), were included. The main Dutch study\(^5\) showed that the proportion of patients with aerobic Gram-negative bacilli in rectal swabs that were not susceptible to the marker antibiotics was lower with SDD than with standard care or SOD. Additionally, a post-hoc analysis of the same Dutch RCT demonstrated that bacteraemia due to highly resistant microorganisms (HRMO) was significantly reduced by SDD compared with SOD (OR 0.37; 95% CI 0.16-0.85) and standard care (OR 0.41; 95% CI 0.18-0.94). Lower respiratory tract colonization due to HRMO was less with SDD (OR 0.58, 95% CI 0.43-0.78) and SOD (OR 0.65, 95% CI 0.49-0.87) compared with standard care\(^7\). In a recent meta-analysis on the development of resistance and the use of SDD no relationship between the use of SDD and resistance was reported\(^8\). In contrast, the use of SDD was associated with a significant reduction in colistin-resistant aerobic Gram-negative bacilli (OR 0.58, 95% CI 0.46 – 0.72)\(^9\).

In conclusion, SDD and SOD may protect against the development of resistance, and when present the incidence is very low\(^10\). Regular surveillance cultures of throat and rectal swabs, as one of the four components of SDD/SOD, can detect resistance at early stage.

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