Submitted

LETTER TO THE EDITOR

Insufficient implementation of the SDD concept may yield invalid conclusions

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Dear editor,

Selective decontamination of the digestive tract (SDD) is a concept that aims to prevent secondary infection in critically ill patients.[1] The basic principles of that concept comprise four sequential steps, i.e. (1) acquisition of potentially pathogenic microorganisms (PPM), (2) colonisation with this PPM leading to abnormal carriership, (3) overgrowth with this PPM and (4) subsequent infection. SDD components are designed to stop this chain of events. Hygiene can partially prevent acquisition.[1] SDD oral paste and gastric suspension prevents colonisation, overgrowth and subsequent infection.[2] A short initial course of intravenous antibiotics aims to treat primary endogenous infections.[1] The substances commonly used in SDD are chosen for bacteria with 'normal' resistance patterns. Wittekamp and co-workers studied the effect of SDD on blood stream infections in ICUs with 'abnormal' resistance patterns.[3] They implemented the commonly used oral substances colistin, tobramycin and nystatin and found no effect. The Achilles heel of their study is that they implemented the *substances* but not the *concept* of SDD. Successful implementation of the SDD concept in a multidrug resistant surrounding requires an adaptation of the substances based on the resistance patterns in the individual patient, otherwise the aforementioned chain of events will not be broken. For instance, for decontamination of non-fermenting bacteria cotrimoxazole should be added to the oral paste and gastric suspension.[4] To decontaminate methicillin-resistant *Staphylococcus aureus* (MRSA) carrier state, oral vancomycin is needed and for multidrug-resistant Gram-negative bacilli (MDRGNB) other orally administered antimicrobials such as paromomycin, temocillin or amikacin might occasionally be needed. Active laxation is an additional measure needed to achieve high rates of decontamination as it brings the SDD substances to the rectum. The implementation of the SDD concept by Wittekamp and co-workers was unsuccessful as they reported a decontamination failure of 14.8% in all patients treated with SDD.[3] In addition, the intravenous course of appropriate antibiotics on admission was not part of the protocol, nystatin was used instead of the normally used amphotericin B and the substances were stopped when mechanical ventilation was stopped but exposure to MDRGNB was still a fact. In conclusion, the SDD *substances* instead of the SDD *concept* was implemented by Wittekamp et al. which, logically, did not result in clinical effects. It cannot be concluded that the concept of SDD fails in ICUs with moderate to high antibiotic resistance prevalence.

Disclosures

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