Bone cement implantation syndrome - responses to queries

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Editor—We appreciate the comments from Dr Karnwal and colleagues and Dr Jain and colleagues and their interest in our recent publication.1 Regarding the question from Dr Karnwal and colleagues on the type of anaesthetic administered to the patients, an overwhelming majority of the included patients (85–90%) received spinal anaesthesia for their surgery, as also stated in Table 1. In addition, the patients were sedated by propofol. We agree that the use of MMA could be a problem for the working environment.

Here follow the responses to the comments from Dr Jain and colleagues:

1. All patients were operated on after traumatic femoral neck fracture. Those patients with previous instrumentation of the femoral canal were excluded.
2. A cement gun is routinely used at our centre. Although there may have been isolated cases where ‘finger packing’ was used, the absolute majority of procedures were done with cement gun. Unfortunately, we do not have data on the exact number of patients in whom the cement gun was used or not used.
3. Vacuum mixing is routinely used at our centre.
4. We do not have data on the incidence of osteoporosis from DEXA screening or the use of anti-osteoporotic drugs in our study group. As our patient material consisted of predominantly elderly patients with a mean age of 85 yr, and that fractured femoral neck is a typical injury seen in osteoporosis, we can assume that the majority of patients had osteoporosis to some degree.

Declaration of interest
None declared.

Reference

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SDD and contextual effect

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Editor—The nation-wide survey of usage of selective decontamination of the digestive tract (SDD) among ICU’s in the UK, as recently published by Canter and colleagues is of great interest as a real world experience with this intervention.1

Among >280 000 admissions to 203 ICU’s in the UK reporting data to the Intensive Care National Audit and Research Center (ICNARC), unit acquired bacteremia occurred in 2.7 percent of the national survey.4 In contrast to the survey findings, among published randomized concurrent control trials (RCCT) of SDD, the mean bacteremia and VAP incidences are unusually high for the control groups.5,7 For the incidence of bacteremia this is as much as two-fold higher vs groups within studies of comparable populations, either without any study intervention, or studies with a non-antibiotic method of intervention. The incidences among current control groups of SDD studies are higher than that among studies of SDD for which the control group was either non-concurrent or concurrent and receiving only the i.v. component of SDD. Presumably, the i.v. component mitigates against this risk. Underlying this discrepancy is a selective increase in coagulase negative staphylococci (CNS), but not in Pseudomonas aeruginosa among bacteremia isolates within concurrent control groups of SDD-RCCT’s vs benchmark groups with data available.5

3. Vacuum mixing is routinely used at our centre.
4. We do not have data on the incidence of osteoporosis from DEXA screening or the use of anti-osteoporotic drugs in our study group. As our patient material consisted of predominantly elderly patients with a mean age of 85 yr, and that fractured femoral neck is a typical injury seen in osteoporosis, we can assume that the majority of patients had osteoporosis to some degree.

Declaration of interest
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A selective increase in Staphylococcus aureus among concurrent control group patients, partially accounts for the increase in VAP rates as a contextual effect of SDD.5

I ask Canter and colleagues whether their survey findings may have a different interpretation. Is it possible that through a contextual effect, SDD, regardless of formulation, increases the risk of VAP and bacteraemia infection for patients concurrently located in the ICU and not receiving SDD.7

In this regard, are the bacteraemia rates among the units using SDD without an i.v. component known? Is the proportion of bacteraemia isolates that were coagulase negative staphylococci (CNS) and Pseudomonas aeruginosa known for units of bacteremia isolates that were coagulase negative staphylococci (CNS) and Pseudomonas aeruginosa known for units not using SDD known? With this information it would be possible to determine how much of the differences seen in the survey results represent a direct effect of SDD in recipients vs indirect or contextual effects of SDD in collocated ICU patients.

Declaration of interest
None declared.

References
5. Hurley JC. Topical antibiotics as a major contextual hazard toward bacteraemia within selective digestive decontamination studies: a meta-analysis. BMC Infect Dis 2014; 14: 714

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Reply from the authors

Reply: SDD and contextual effect

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Editor—We thank Dr Hurley for his interest in our study.5 The finding in other studies of unusually high bacteraemia and ventilator-associated pneumonia (VAP) rates in control group patients is interesting. We investigated the use of selective decontamination of the digestive tract (SDD) in UK critical care and compared patient outcomes in units that do and do not report using SDD. We did not, however, collect information about SDD use at a patient level and so cannot draw any conclusions on the risk of VAP and bacteraemia infection in patients who did not receive SDD within a unit that routinely uses SDD.

The rate of unit-acquired infections in blood in the six units that reported using SDD, without an i.v. component, was 4.1% (168/4078), which was higher than the rates observed in both the three SDD units that included an i.v. component (0.1%) and the 196 non-SDD units (2.1%). However, these results should be interpreted cautiously given the small number of units that reported using SDD. Furthermore, this was a non-randomized comparison and although we controlled for differences in case mix, the risk of residual confounding cannot be excluded.

The analysis comparing patient outcomes was based on existing data from a high quality clinical database. Coagulase negative staphylococci isolates in blood are not recorded as bacteraemia, as these are usually contaminants. Of the 170 bacteraemias reported in the nine SDD units, 13 (7.6%) were reported as having had a Pseudomonas species isolated in the blood compared with 426 (10.2%) out of the 4168 bacteraemias reported by the 196 non-SDD units. The specific species of isolates in blood were not reported.

In summary, our results are suggestive of cautious support for the benefits of SDD in potentially reducing bacteraemia (when the i.v. component is adopted). The impact of SDD on other outcomes was less apparent, with no demonstrable benefit observed on mortality. Data on use of SDD was collected at a unit level only in our study, so we are unable to draw any conclusions on the direct effect of SDD in recipients compared with the indirect or contextual effects in patients who did not receive SDD.

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None declared.

Reference

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