



BACKGROUND AND IMPORTANCE

One of the measures to reduce the rate of infections by multidrug-resistant bacteria in Intensive **Care Unit (ICU) services promoted in the Pneumonia Zero (NZ) programme is oropharyngeal decontamination (DOF) and/or selective digestive decontamination (SDD)**. Of the different existing protocols, we implemented the administration of non-absorbable topical antimicrobials (colistin, gentamicin and nystatin) in the oropharynx (paste) and gastrointestinal tract (solution). Both the paste and solution were prepared as magistral formulations. It should be noted that in case of isolation of methicillin-resistant *Staphylococcus aureus* (MRSA) or an increase in the rate of MRSA in our hospital, vancomycin would be added.

OBJETIVE

The aim was to assess the effect of such a measure on studies of the prevalence of multidrug-resistant bacteria in critically ill patients, and to see if there is selection for resistance mechanisms.

METHODS AND MATERIAL

Ambispective study comprising the pre-DDS (01/01/2022-30/04/2022) and DDS (01/01/2023-30/04/2023) periods conducted in the 22-bed ICU.

From July 2022, ICU patients with isolation of multidrug-resistant bacteria in both clinical or surveillance samples, as well as patients with estimated intubation > 72 h or non-intubated patients with risk factors for developing pneumonia are administered DDS/DOF. In addition, nasal, pharyngo-tonsillar and perianal exudate samples are collected for microbiological surveillance cultures on admission and every Tuesday thereafter. Nasal samples are sown in MRSM medium (Biomérieux) and pharyngo-tonsillar and perianal samples in ESBL and CARB/OXA media (Biomérieux). Incubate at 37°C for 48h.

RESULTS

Pre-DDS PERIOD (01/01/2022-30/04/2022)

- 626 Samples were received from 132 patients.
- 23 multidrug-resistant bacteria were detected:
 - ✓ 1 MRSA
 - ✓ 1 *Acinetobacter baumannii*
 - ✓ 8 ESBL (extended-spectrum beta-lactamase)-producing enterobacteria
 - ✓ 13 Carbapenemase-producing gram-negative bacillus.

DDS PERIOD (01/01/2023-30/04/2023)

- 537 Samples were received from 124 patients.
- 9 multidrug-resistant bacteria were detected:
 - ✓ 1 *Acinetobacter baumannii*
 - ✓ 8 BLEE-producing enterobacteria

p-value < 0,05

CONCLUSIONS

The DDS/DOF protocols applied in the ICU of our hospital have shown a significant decrease in colonisation by multidrug-resistant bacteria in critically ill patients. As for MRSA, no differences could be seen in this period, so it would be advisable to extend the study period. However, the role of this measure in the disappearance of carbapenemase-producing bacteria should be highlighted.