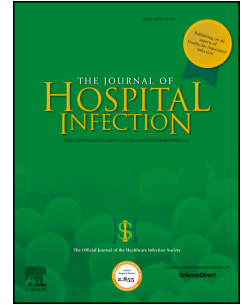


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Evaluation of Sedation-Related Medication Errors in Contact Isolation Patients in the ICU

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Title Page

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Structured Summary

Background: Patients in the intensive care unit (ICU), may be placed in contact isolation (CI) for methicillin-resistant *Staphylococcus aureus* (MRSA) colonization to prevent transmission. Prior studies suggest that isolated patients may receive substandard care compared to patients not on isolation. An optimal level of sedation is required to facilitate mechanical ventilation (MV) and to minimize adverse outcomes.

Aim: To determine if patients on MV and isolated for MRSA colonization are at an increased risk of inappropriate over-sedation compared to patients not on CI.

Methods: Retrospective, chart review of adult patients on MV who received a MRSA nasal PCR assay and sedation within 24 and 48 hours of ICU admission, respectively. Endpoints included rate of inappropriate sedation, length of ICU stay, length of time on MV, and incidence of ventilator-associated complications.

Findings: 226 patients were included (114 MRSA positive, 112 MRSA negative). Baseline demographics were similar between groups with the exception of ICU admission diagnosis. Fifty-six (55%) patients on CI experienced inappropriate over-sedation compared to 49 (50%) patients not on CI ($p = 0.482$). Patients placed on CI spent longer in the ICU (10.4 vs 6.8 days, $p = 0.0006$), longer on MV (8.98 vs 4.81 days, $p < 0.001$), and required a tracheostomy more frequently (37 (32%) vs 14 (13%), $p = 0.0003$).

Conclusions: Patients on CI were not at an increased risk of over-sedation compared to patients not on CI. There was an association between the use of CI for MRSA nares colonization and a prolonged stay in the ICU and longer time on MV.

Keywords: contact isolation, contact precaution, methicillin-resistant *Staphylococcus aureus*, infection control, mechanical ventilation, critical care

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