

What's New in the Patient Safety World

January 2019

Oral Decontamination Strategy Fails

Strategies to reduce infections (especially with drug-resistant organisms) in ICU patients have included chlorhexidine (CHX) mouthwash, selective oropharyngeal decontamination (SOD), and selective digestive tract decontamination (SDD). But there have been problems with some of the studies done (see, for example, our January 2009 What's New in the Patient Safety World column "[Preventing Infections in the ICU](#)"). These practices are quite widespread in ICU's even though the strength of evidence has been debatable.

In our October 2017 What's New in the Patient Safety World column "[Updated Guidelines for VAP and HAP](#)" we discussed updated European guidelines for the management of hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP) ([Torres 2017](#)). Those guidelines included an extensive review of the literature. The guideline panel decided not to issue a recommendation on the use of chlorhexidine to perform selective oral decontamination (SOD) in patients requiring mechanical ventilation until more safety data become available, due to the unclear balance between a potential reduction in pneumonia rate and a potential increase in mortality. (They did suggest the use of SOD, but not SDD, in settings with low rates of antibiotic-resistant bacteria and low antibiotic consumption, but this was a weak recommendation because of low quality of evidence.) There was a wide discrepancy in the panel's views regarding the benefits of chlorhexidine in reducing nosocomial pneumonia and the potential risks associated with its use.

In settings with low levels of antibiotic resistance, they noted SOD (with topical nonabsorbable antibiotics) and SDD (with oropharyngeal and digestive tube administration of topical nonabsorbable antibiotics and IV antibiotics) may be associated with reductions in nosocomial pneumonia and death. The potential effects of antibiotic use on antimicrobial resistance are uncertain. Considering the clinical benefits of these two strategies to be similar, the guideline panel advocated the use of SOD and avoiding supplementary IV antibiotics as in SDD. They noted the effectiveness of SOD or SDD in settings with high levels of antibiotic resistance has not been assessed.

Given the premise that the effects of chlorhexidine (CHX) mouthwash, selective oropharyngeal decontamination (SOD), and selective digestive tract decontamination (SDD) on patient outcomes in ICUs with moderate to high levels of antibiotic resistance are unknown, Wittekamp and colleagues performed a randomized controlled trial to address the issues ([Wittekamp 2018](#)). They found that, among patients receiving mechanical ventilation in European ICUs with moderate to high antibiotic resistance prevalence, use of CHX mouthwash, SOD, or SDD was not associated with reductions in

ICU-acquired bloodstream infections caused by multidrug-resistant gram-negative bacteria compared with standard care.

The accompanying editorial ([Vandenbroucke-Grauls 2018](#)) notes that the study shows no benefits in situations with higher antibiotic resistance patterns that unfortunately still prevail in most ICUs around the world.

Note that the focus of the Torres article was on VAP, whereas the Wittekamp study was focused on ICU-acquired bloodstream infections, so there may still be some out there advocating for continued use. However, we suspect the Wittekamp study will likely reduce the use of these strategies.

References:

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