



Impact of Anti-MRSA Therapies on MRSA Nasal Screening

MRSA nasal screening have a high negative predictive value (NPV) in community-acquired pneumonia, and empiric MRSA antibiotics can be discontinued in [low risk pneumonia patients with negative screens](#). However, patients may receive anti-MRSA therapies including antibiotics (e.g. vancomycin) or MRSA decolonization (e.g. mupirocin) before nasal screens are obtained, raising concerns for false negatives. In this situation, is it still safe to stop empiric MRSA antibiotics?

Do false negatives MRSA nasal screens occur if patients receive anti-MRSA antibiotics or topical MRSA decolonization?

Probably, however the impact may be limited within the first 48 hours of exposure. The effect of anti-MRSA therapies is slightly greater on culture-based nasal screens than with polymerase chain reaction (PCR). This may be due to PCR's higher sensitivity, ability to detect non-viable organisms, or false-positives from detecting other non-MRSA *Staphylococcus* DNA targets.¹

Do clinical studies on MRSA nasal screening include patients that received anti-MRSA therapy?

No clinical studies have clearly defined the impact of anti-MRSA therapies. A prospective study showed similar clinical outcomes between an antimicrobial stewardship recommendation guided by negative MRSA nasal culture vs no recommendation. Patients included those who received MRSA nasal screens and anti-MRSA antibiotics within 24 hours of ICU admission. However, it is not specified if MRSA nasal cultures were obtained before or after anti-MRSA antibiotic administration.²

Patients who received nasal decolonization prior to MRSA nasal screens are often excluded from studies examining the impact of MRSA nasal screen guided de-escalation.^{3,4}

Can antibiotics be de-escalated when a negative MRSA screen was obtained AFTER administration of anti-MRSA therapies?

The decision to de-escalate antibiotics should take into consideration patient risk factors for MRSA, clinical severity, and culture results. It may still be reasonable to stop antibiotics with negative MRSA screens after receiving anti-MRSA antibiotics or decolonization if exposure is limited (e.g. within 48 hours), particularly in light of data suggesting a lack of antibiotic benefit, and potential harm with empiric MRSA therapy in community-acquired pneumonia.⁵ In patients with severe pneumonia who are high risk for MRSA, it may be prudent to continue empiric anti-MRSA therapy despite negative MRSA nasal screens.

Key Takeaway: Available data do not allow for strong conclusions on the utility of MRSA nasal screens obtained after anti-MRSA antibiotic exposure or nasal decolonization. Clinical utility is likely decreased, but not zero. Decisions to stop anti-MRSA therapy should be individualized to specific patient factors.

References:

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