OUR LADY OF THE LAKE
REGIONAL MEDICAL CENTER
Franciscan Missionaries of Our Lady Health System

MRSA Nasal Swabs for De-escalation of Anti-MRSA Therapy in Pneumonia

Background: Empiric antimicrobial therapy in pneumonia remains a challenge, especially among COVID-19 patients where sputum cultures are more difficult to obtain. De-escalation of anti-MRSA coverage is usually guided by the results of sputum cultures (which can take >48hrs) or negative blood cultures at 48hrs. Due to the high rate of AKI in COVID-19 patients, the task force has recommended against the use of vancomycin for MRSA coverage in the absence of severe sepsis or concerns for bloodstream infections. Linezolid, which is recommended as the first-line option for these patients, is now showing supply issues due increased usage.

Plan: In order to decrease rates of anti-MRSA therapy, the task force is recommending the implementation of routine MRSA nasal swabs for all COVID-19 patients (suspected or confirmed) requiring anti-MRSA therapy. Nasal MRSA PCR tests are widely utilized for the purposes of deescalating anti-MRSA therapy in the treatment of pneumonia. Many studies have shown that negative MRSA nasal PCR are very reliable in ruling out MRSA involvement in pneumonia (negative predictive value >98%).

Process:

Step 1: Ordering of MRSA nasal swab

1. COVID order set
    a. Can be selected under the labs section (not pre-checked)
    b. Under the anti-MRSA therapy section (will be automatically added when linezolid or vancomycin are selected)
2. Ordered manually by providers at the time of placing order for anti-MRSA therapy
    a. Search MRSA nasal under orders
3. Ordered by clinical pharmacist when reviewing patients on anti-MRSA therapy
    a. If no order has been placed, the clinical pharmacist will place an order per protocol
    b. If the patient has received anti-MRSA therapy for >48 hours prior to identification, the swab will not be ordered

Step 2: Sample collection

1. RN will collect nasal swab sample during next entry into patient room
2. MRSA nasal swab kits will be stocked with usual culture supplies (different than RVP swab)

Step 3: Result

1. Negative result
    a. Provider can discontinue MRSA coverage if no alternative indication exists
        i. Consider utilizing standard practices for de-escalation in patients with an alternative source of infection or severe sepsis
        ii. Lower NPV shown in some studies (~94%) in patients with VAP
    b. Clinical pharmacist will call provider to discuss if they identify the result first
2. Positive result
    a. Utilize standard practices (ex: sputum culture results, negative blood cultures, clinical status) for de-escalation in these cases.
    b. Positive MRSA nasal swab does not mean that the patient has MRSA pneumonia (very low positive predictive value ~30%)

Note: The negative predictive value of MRSA nasal swabs is lower for alternative infection sites. Use of MRSA nasal swabs for de-escalation of anti-MRSA therapy in infections other than pneumonia is not recommended.

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