Letter to the Editor

[The Editor is not responsible for the views expressed by the correspondents]

Does only Mupirocin enough for Nasal Decolonization in Methicillin-resistant *Staphylococcus Aureus* Carriers or Do we need more ?

Sir, — Staphylococcus aureus, particularly, its resistant variant Methicillin-resistant S Aureus (MRSA), is one of the most commonly prevalent nosocomial pathogens, creating a concern for the world population. For the treatment of severe MRSA infections, vancomycin is the drug of choice for physicians[1]. However, due to the emergence of vancomycin-resistant MRSA, a topical glycopeptide antibiotic, Mupirocin is now frequently used for nasal decolonization of patients and Healthcare Workers (HCWs) to prevent the transmission of MRSA in a hospital setup[2]. But few recent studies have documented Mupirocin-resistant MRSA, making the situation even more critical and raising the question, what is next? Or should we move to alternative preventive strategies?

During a sudden hospital outbreak of MRSA, the Hospital Infection Control Committee (HICC) has to initiate nasal swab surveillance from staff to find out the source of infection. If the source is identified, the treatment strategy will be as per HICC protocol. If no staff is found to have MRSA positive, a root cause analysis would need to be conducted, which could lead to the OPD or emergency department, which serves as the hospital's main entrance. If MRSA grows in any specimen, confirm it again and start Mupirocin treatment for 5-7 days in accordance with institutional policy.

For infection prevention, isolation of the source is also necessary in addition to treatment. Once the treatment is completed, fresh samples must be collected, and if MRSA does not grow, the treatment is successful. But if there is a growth of MRSA, treatment should be resumed and the sample should be collected again after completion of treatment. If again MRSA grows, the medical history of the source Health Care worker needs to be investigated further. Many times, medical history can reveal the reason behind MRSA growth even after mupirocin treatment. Mupirocin susceptibility of an isolated MRSA strain can be tested, and if require (colonization persists even after completion of two courses of mupirocin treatment or specimen detect mupirocin resistance), another drug such as chlorhexidine or Rifampicin, which is not often used to treat MRSA, can be added[3]. After the treatment is completed, collect the sample again to check for MRSA growth. Usually, after combination therapy, there will be a lesser chance of MRSA colonization still existing. In our center, a similar incident was experienced before, and we addressed it in accordance with institutional HICC protocol and as described above.

For the treatment of MRSA nasal carriage in healthy adult patients and HCWs, nasal formulation of mupirocin is frequently advised. It interferes with bacterial protein synthesis but continuous genetic evolution and the emergence of resistant strain causes treatment failure[4]. Nasal swab surveillance is necessary at regular intervals as well as during the outbreak of MRSA[5]. The purpose of surveillance is not only to collect samples and make treatment recommendations but also to retest samples after treatments to ensure that they were successfully completed[6].

In conclusion, we would like to state that, although Mupirocin is the cornerstone of decolonization regimens, the existence of mupirocin resistance in MRSA strain is a cause for serious concern. It could be limited by the detection of Mupirocin resistance, regular surveillance, and effective infection control initiatives including standard precautions and environmental cleaning[7]. Nasal swab collection for MRSA carriers' detection during the pre-employment health checkup could be a successful strategy to prevent healthcare-associated staphylococcal infections. Based on our real experience, we also strongly suggest that during MRSA nasal carrier surveillance, root cause analysis, which includes the entrance of the hospital setup, must be done, even if there is some positive evidence scattered here and there[8].

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