
ICU Volume 5 - Issue 4 - Winter 2005 - Views and Interviews

Management of MRSA

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Dr Bellingan presents his viewpoint on the isolation of MRSA patients in intensive care.

Overview

There is little unanimity in the management of MRSA. I believe that we must use the best evidence available and, where lacking, we should continue with common sense approaches until we have thoughtfully challenged unfounded concepts. If these are found wanting we must not be afraid to adopt new strategies.

Hand Hygiene

Currently recommendations are for staff to clean their hands before and after patient contact and after removing their gloves. Staff should wear gloves and aprons when in contact with patient body fluids and change them between patients. A problem not really addressed is the high frequency of staff-patient contact in the ICU. Observations demonstrate 20 to 40 contacts per hour, which could require up to 30 minutes in hand hygiene! This could explain the universally woeful hand hygiene compliance of only 10 to 40%. But which are true "high risk" staff-patient contacts?

Do these include comfort measures such as holding the patient's hand or only contact with open wounds, body fluids etc? Should staff undertake hand hygiene between touching the local environment and contact with the patient? A manageable hand hygiene frequency focused on real risk may improve compliance.

There is little evidence on how or how often a patient's environment should be cleaned. We need to assess the importance of environmental MRSA contamination in transmission. We may need to dramatically increase the cleaning frequency and/or cleaning methods to avoid environmental transmission.

Elective Surgical Cases

In my view there should be a different approach to screening of elective surgical cases to that for general critical care patients. Elective patients should have pre-admission screening and, if positive, should have Mupirocin cream and Chlorhexidine washes commenced prior to admission. This will significantly reduce wound infection and, by restricting to specific patients, avoid resistance. I recommend continuing to isolate patients with MRSA in elective surgical units, at least until this measure is proven ineffective.

General Critical Care Patients

For general critical care patients I advocate screening of all patients on admission, weekly and on discharge, and using this data for an ongoing audit of MRSA levels, which is vital if changes in management policy are to be introduced. Current screening techniques are relatively insensitive and can take days to identify MRSA, which does not allow rapid responses.

A Cochrane review concluded that there is insufficient evidence to support antimicrobial therapy for eradication of MRSA. Although Mupirocin has been shown to be effective, recolonisation and resistance limit its widespread use. In the absence of an effective policy for decontamination, the only other approach is isolation. Our recent study suggests that isolation of patients colonised with MRSA, when in a unit with endemic

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MRSA (as most UK ICUs are), does not work (Cepeda et al 2005). This, coupled with high bed occupancy rates, makes it difficult to adopt a policy of isolation.

Furthermore, isolation may not be harmless; studies show that it may provide a barrier to care with reduction in staff-patient contact time, despite isolated patients having higher APACHE II scores than non-isolated patients. In another study, the incidence of MRSA rose 8-fold during the SARS outbreak in Hong Kong (Yap et al 2004), which further challenges our ideas on isolation, hand hygiene and contact precautions.

Currently screening focuses on the nose. However one study has indicated that oropharyngeal carriage occurs frequently and that using oral vancomycin reduces colonisation and MRSA pneumonia, without the introduction of resistance. This topic urgently needs a definitive study and I would not recommend changing practices until new data is available.

Conclusion

Screening for MRSA should be routine for ongoing audit, but only in preoperative elective cases should decontamination be used. The potential for rapid screening (hours rather than days) may allow rapid identification of emergency surgical patients colonised with MRSA prior to surgery, such that decontamination regimes can be instituted for these selected patients prior to theatre. In general, for units with endemic MRSA, isolation probably has no place. Compliance with hand hygiene needs to be increased; this may occur through a better understanding of which contacts pose a high risk, including the importance of the environment in MRSA acquisition.

Published on : Fri, 21 Oct 2011