Department of Health, Social Services and Public Safety
www.dhsspsni.gov.uk
An Roinn Sláinte, Seirbhísí Sóisialta agus Sábháilteachta Poiblí
Mannystrie o Poustie, Resydènter Heisin an Fowk Siccar

Meticillin-Resistant *Staphylococcus aureus* (MRSA)

Key Points

Screen for MRSA in high risk groups

If positive in carrier sites, commence topical decolonisation protocol

Patients who have MRSA should preferably be isolated in a single room

Hand hygiene will help to prevent the spread of MRSA

Introduction

Definitions

MRSA: Meticillin-Resistant *Staphylococcus aureus*

MRSA Colonisation: this refers to the presence of MRSA as detected by the sampling of recognised carrier sites (e.g. nose, groin, skin lesions). These patients will not usually have symptoms or signs of infection.

MRSA Infection: this refers to the presence of inflammation at a body site or system associated with laboratory proven or suspected MRSA.

Introduction

Staphylococcus aureus is a bacterium which is commonly found on the skin or in the noses of healthy people. At some point in their lives approximately 1 in 3 of the population carry *Staphylococcus aureus* without developing infection. This is called colonisation. Although *Staphylococcus aureus* is often harmless at these sites, it may cause infection by entering the body through a break in the skin such as abrasions, cuts, wounds including surgical incisions or indwelling devices such as Venflons or other medical devices.

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These infections may be mild such pimples, boils, small abscesses or minor wound infection; or serious such as infection of the blood stream (bacteraemia), heart valves, bones or joints.

Meticillin-resistant, *Staphylococcus aureus* (MRSA)is a type of *Staphylococcus aureus* which is resistant to the antimicrobial meticillin and other related antibiotics. If resistant to Meticillin, these strains of *Staphylococcus aureus* will be resistant to flucloxacillin and all other ß-lactam antibiotics.

MRSA is no more infectious nor virulent than sensitive strains of *Staphylococcus aureus* and can be treated with antibiotics, however this must be with an antibiotic to which the MRSA is not Resistant

MRSA is transmitted by both direct and indirect contact and it is for this reason that hand hygiene before and after EVERY contact with the patient and their close environment, is important to prevent transmission in the healthcare setting.

A patient with MRSA will be identified in the laboratory because a specimen (often a wound swab) has been sent from the ward or unit. The ward or unit will be notified of the results by the Infection Prevention and Control Team.

Screening for MRSA is not 100% sensitive, i.e.: a negative MRSA screen does not always exclude MRSA. Some individuals have undetectably low carriage which manifests itself only after antibiotic treatment or stress such as surgery.

Guidelines

MRSA Screening

Screen for MRSA in high risk groups as per Trust protocol.

- Belfast Trust
- Northern Trust
- Southern Trust
- South Eastern Trust
- Western Trust

Screening Method

- Screening for MRSA is not 100% sensitive as some individuals may have undetectably low carriage which manifests itself only after antibiotic treatment or stress such as surgery
- Moisten swabs with sterile water prior to taking the specimen
- Swab nose (one swab to both nostrils) and additional sites (e.g. groin) as per Trust protocol
- Swab any wounds, lesions and skin breaks
- Send with request form which states "MRSA SCREEN"
- Screening must not be done while the patient is receiving MRSA Decolonisation and can be affected when patient is on antibiotics

Management of Patients Found to Have MRSA

- Hand Hygiene. Alcohol handrub (or alcoholic chlorhexidine handrub) should be used, or clinical hand washing performed, before and after attending to the patient.
- Aprons. A disposable plastic apron should be worn when in close contact with the patient or their immediate environment, where there is a likelihood of clothing/uniform becoming contaminated.
- Isolation. Isolate all MRSA patients in a side room, if possible, especially on high risk units (e.g. surgical or orthopaedic wards).
    - Patients with infected wounds, active chronic skin conditions or with respiratory tract colonisation are a higher priority for side room isolation than those only colonised at carrier sites.
    - If cared for on the open ward, keep MRSA patients separate from other susceptible patients in the immediate area. Cohort if several patients are involved.
- Call Infection Prevention Control. Inform the Infection Prevention and Control Team (IPCT) if a patient known to be colonised with MRSA is admitted to the ward or unit. The IPCT will advise about the need for isolation, cohort nursing and decolonisation.
  Visitors. Visitors need not wear protective clothing, but should be advised to wash their hands or use alcohol handrub before entering or leaving the room and not to visit other patients.
- Patient Movement. Movement of MRSA patients to other wards, departments, hospitals or units should be kept to a minimum.
    - If an MRSA patient is being transferred to another ward, facility or hospital for ongoing care the receiving area must be notified in advance of any suspected /confirmed infectious condition, to allow the appropriate precautions to be taken.
- Provide the patient with MRSA information leaflet (see website)

Decolonisation Protocol

- Patients found to be colonised with MRSA should be reported to the Infection Prevention & Control Team.
- Consideration should be given to commencing a decolonisation protocol to reduce the shedding of MRSA from the patient and to attempt to eliminate MRSA from carriage sites. Decolonisation involves antiseptic body wash and nasal antibacterial ointments, e.g.: five to seven days treatment with topical antimicrobial nasal ointment and seven days of antimicrobial body wash. Decolonisation of other specific body sites (e.g. Throat and wounds) should be only done in consultation with microbiologist advice.

Post Decolonisation Screening

- Repeat screening of colonisation sites should only be carried out after decolonisation (and not sooner than 48 hours after completing decolonisation). A patient must have three consecutive sets of negative MRSA screening swabs before the Infection control precautions are stopped.
- These swabs to assess clearance should be taken at least 48 hours apart.
- Without three consecutive sets of negative MRSA screening swabs it is assumed that a patient remains colonised with MRSA for the duration of their admission or stay.

Follow-up of Colonised Patients

- Perform a risk assessment before removing a patient from isolation, and record this in the patient’s notes.
- If patients known to have had MRSA are re-admitted to a healthcare environment it is assumed they remain colonised. If screened, some of these patients may be found to be negative (although this is rare in those with chronically open wounds.) Even if found to be negative on screening, MRSA carriage can reappear, especially if the patient is given antibiotics.
- Three consecutive sets of MRSA screening swabs should be taken at least 48 hours apart and be negative before considering a patient free from MRSA.

Infected Patients

- Patients presenting with infection with MRSA will require specific antimicrobial therapy. Advice should be sought from the Medical Microbiologist
- Many patients who are colonised and not presenting with infection will not require systemic antimicrobial therapy.

Outbreaks of MRSA

- Where two or more new cases of MRSA are identified in a ward or clinical area this may constitute transmission within the clinical area.
- This should be promptly reported to the Infection Prevention Control Team who may recommend further screening and additional control measures
- MRSA outbreaks may require the closure of a ward to new admissions. Click to read about outbreak management

Cleaning Procedures

- Daily cleaning procedures of side rooms will be performed by cleaning staff according to the Source Isolation procedure and their local cleaning schedules/ procedures.
- After discharge a terminal clean will be performed by cleaning staff according to the Source Isolation procedure and their local cleaning schedules/ procedures.

Staff Found to Have MRSA

- It may not be appropriate for Health care staff with skin conditions such as psoriasis, eczema or dermatitis to look after patients with MRSA. They should discuss the risks of working in a clinical environment with Occupational Health Department (OHD).
- Staff are strongly advised not to screen themselves for MRSA without the knowledge of Infection Prevention Control Team (IPCT) or OHD. Screening involves taking specimens from the nose and any wounds or skin lesions and should ONLY be done by arrangement with a member of OHD or the IPCT.
- Staff screening should only be carried out prior to starting a span of duty, to avoid the detection of transient carriage, not during or after a spell of duty.
- The member of staff will be notified by the IPCT or OHD of the screen results.
- On any request form, please state that the sample is from a member of staff and the area in which they currently working. Results can then be kept confidential.
- A decolonisation protocol may be recommended, followed by post-decolonisation screening.
- The staff member must inform their line manager of positive screen results. Occupational Health, with the IPCT will advise the staff member of any additional control measures or work limitations which should be applied to reduce the risk of transmission to patients or clients.
- Visitors should not eat in the patient's room.
- Staff with persistent carriage at sites other than the nose should be considered for referral for appropriate specialist management (e.g. ear nose and throat , dermatology).

Limiting the Impact of MRSA

- Ensure clear guidance to all staff on the principles of infection prevention and infection
- Inform the patient of infection control objectives
- Provide the patient with MRSA information leaflet (Click for the leaflet)
- Challenge visiting clinical staff to observe agreed ward practices
- Minimise clutter in the patient's bedside area
- Ensure Alcohol handrub is provided by every bedside
- Keep handwashing areas clean, ensure adequate supplies of products
- Ensure easy access to protective clothing (e.g. gloves & aprons)
- Place clinical waste bins for disposal of gloves, aprons etc in convenient sites
- Treatment preparation areas and trolleys for aseptic techniques to be kept clean and wiped with 70% isopropyl alcohol before use
- Good communications with cleaning staff to facilitate scheduled & spot cleaning as required
- Ensure cleaning regimens for BP cuffs/machines, commodes, and other commonly used equipment
- Keep sluice and dirty areas clean and tidy
- Clean commodes after each use
- Keep nursing areas and notes clean and tidy
- No food /eating at the nurses' station

Community

Patient Information

- If MRSA is identified in the community the G.P. should inform the patient and provide them with an MRSA information leaflet. (Click for the leaflet)

General Precautions in Practice

- There are no specific infection control measures required when carrying out routine discussion or consultation with the patient. If physical examination or intervention is required standard precautions should be used.
- Hand hygiene is the single most important practice.
- Disposable aprons and gloves should be worn when carrying out wound dressings, performing aseptic technique or dealing with blood and body fluids.
- Cuts, sores and wounds should be covered with impermeable dressings.
- Equipment that is not disposable should be disinfected after use.

Measures in a Patient's own Home

- Patients with MRSA should be encouraged to lead a normal life.
- Patients and family members/carers should be given basic advice on hand hygiene and environmental cleanliness.
- If the patient has to go back to hospital the receiving staff should be informed of the MRSA status.

Measures in a Residential / Day-care Setting

- Residents with MRSA should be encouraged to lead a normal life without restrictions.
- Residents may join others residents in communal areas e.g. day rooms/dining areas, receive visitors or go on outings etc.
- Residents may share a room with another resident however the resident sharing must have no open wounds/sores/drips or catheters.
- When admission or attendance to hospital is necessary the receiving staff should be informed of the residents MRSA status.

Guidance for the Transportation of MRSA Positive Patients

Patients who are MRSA positive can be classified into two categories for transportation by trust transport/ambulance:

Category One:

- Patients colonised with MRSA or who have infected wounds or skin lesions which are covered by a dressing may be transported with other patients and require no special precautions.

Category Two:

- Patients who are heavily colonised with MRSA e.g. patients with psoriasis or eczema and patients who have infected exposed wounds or skin lesions e.g. burns should be transported by themselves.
- When arranging patient transportation please inform trust transport/Northern Ireland Ambulance Service of the patients category to assist them in the implementation of appropriate precautions.
- Contact a member of the Infection Prevention and Control Team if you need help to decide a patient status prior to arranging transportation.

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Screening for MRSA

- Screening for MRSA in the community is generally not required. If eradication treatment has been initiated in hospital, post decolonisation screening may be undertaken at the discretion of the GP.

Topical Decolonisation of MRSA

- As there is little risk of transmitting MRSA to healthy members of the community and minimal risk of them becoming infected, topical decolonisation of MRSA carriage in the community is generally not required.
- Topical decolonisation may be considered in certain circumstances including:
    - The patient is on a waiting list for an elective surgical procedure
    - Topical decolonisation has already commenced prior to hospital discharge
    - The patient shares a household with another vulnerable person or a healthcare worker
    - The patient has a chronic illness with recurrent hospital admissions
- Decolonisation may not be achievable if the patient has additional risk factors such as an indwelling device or MRSA isolated from a chronic ulcer.
- Decolonisation therapy must be prescribed by the GP following consultation with the Microbiologist. Repeated treatments should be avoided to prevent the development of resistant strains.

References

1. Click for the 2006 Hospital Infection Society National Guidelines on the Prevention and Control of MRSA.
   [Available at http://www.his.org.uk/_db/_documents/MRSA_Guidelines_PDF.pdf]

2. Health Protection Agency. General advice on Infections such as MRSA including surveillance data: [Available at: http://www.hpa.org.uk/ (look at Infectious diseases tab, then Healthcare associated Infection section.)