

## Meticillin Resistant *Staphylococcus Aureus* (MRSA)

### Organisms

- MRSA are strains of *S. aureus* that are resistant to the isoxazoyl penicillin's such as meticillin and flucloxacillin. MRSA are currently cross-resistant to all currently licensed beta-lactam antibiotics e.g., amoxicillin, cephalosporins and co-amoxiclav. In addition, they can be resistant to other classes of antibiotics, but this is less predictable. Presently in Nottingham, we have both erythromycin-resistant and sensitive strains in the community and nearly all isolates are resistant to the quinolone antibiotics e.g., ciprofloxacin, levofloxacin.
- **Some strains of MRSA also produce [PVL](#) toxin.**

### Assessment

- Patients most at risk are those who have frequent contact with healthcare, have wounds or medical devices, are elderly or chronically ill, diabetic, have had previous broad-spectrum antibiotics, or live with someone with a previous MRSA diagnosis.
- Screening programmes are in place for admissions to secondary care.
- MRSA, like sensitive *S. aureus* isolates, can colonise wounds, therefore antibiotics are not indicated unless there are signs suggestive of infection e.g., purulent discharge, cellulitis. If there is a severe infection or an infection that is not responding to appropriate oral antibiotics, the patient may need hospital admission for intravenous treatment (for example IV vancomycin).
- If the patient is admitted to the hospital, **inform the admitting team** that the patient has had MRSA isolated, so that appropriate antibiotics are given, the patient is offered decolonisation and is admitted to a side room.
- During **out of hours, medical practitioners** should be made aware of patients with an MRSA positive culture by using a **Special Patient Note** to ensure that appropriate prescribing occurs.
- MRSA infected/colonised numbers of patients has been reducing, as more are being actively treated and screened in an effort to reduce the community reservoir. The Infection Prevention and Control Teams (IPC) within primary care will discuss individual cases with practitioners to ensure the most appropriate screening and treatment regimen occurs.
  - CityCare Infection Prevention & Control Team (0115 8834902) or e-mail [ncp.ipct@nhs.net](mailto:ncp.ipct@nhs.net)
  - ICB County Infection Prevention & Control Team (01623 673081) or e-mail [nnicb-nn.ipc@nhs.net](mailto:nnicb-nn.ipc@nhs.net)

Patient Information link [here](#)

### Treatment

Skin and soft tissue infections (SSTIs):

- If the patient is febrile, appears unwell or is toxic with a SSTI consider assessment in the hospital.
- Swab the lesion if purulent exudates or pus are present.
- If MRSA or MRSA/PVL is suspected because of previous results or surgical or healthcare-related, it is very important to collect a microbiology sample.
- **Do not give** antibiotics to patients with minor SSTIs or small abscesses (<5cm). Incise and drain small abscesses without [cellulitis](#).
- For larger abscesses after incision and drainage start empirical or culture-guided systemic antibiotic therapy for larger abscesses or if there are infections in other family members.
- Serious and deep-seated MRSA infections refer for urgent assessment and treatment in hospital.
- If infection fails to respond to treatment discuss with a Medical Microbiologist.
- Linezolid may be advised by Microbiology for MRSA skin/soft tissue infection. It is classified as an Amber 2 agent. It has important drug interactions and requires monitoring.

Other infections: guided by sensitivity report or if not available and empirical treatment needed, please send sample(s) for culture and discuss with the duty microbiologist.

**Antimicrobial and decolonisation treatment for skin and soft tissue infections:**

Antibiotic <sup>1</sup>	Dosage	Duration
<b>Choice guided by results of sensitivity testing:</b>		
Doxycycline <sup>4</sup> (not in pregnancy or children)	<b>Adult:</b> 200mg first day then 100mg once a day	5-7 days
<b>Or</b> Clarithromycin <sup>3</sup>	<b>Adult:</b> 500mg twice a day	5-7 days
<b>Or</b> Clindamycin	<b>Adult:</b> 300mg four times a day	5-7 days
In children consider Erythromycin <sup>2,3</sup>	<b>Neonate:</b> 12.5 mg/kg every 6 hours. <b>Child 1–23 months:</b> 125 mg four times a day. (On advice dose may be doubled in severe infections). <b>Child 2–7 years:</b> 250 mg four times a day (On advice dose may be doubled in severe infections). <b>Child 8–17 years:</b> 250–500 mg four times a day	5-7 days

<sup>1</sup>See [BNF](#) and [BNFC](#) for appropriate use and dosing in specific populations, e.g., hepatic, or renal impairment, pregnancy, and breastfeeding.

<sup>2</sup>Erythromycin is preferred in women who are pregnant.

<sup>3</sup>Withhold statins whilst on clarithromycin/erythromycin course.

<sup>4</sup>Doxycycline is not suitable for pregnant women

**Skin Decolonisation Treatment:**

This requires a combination of more than one medication.

Medication <sup>1</sup>	Dosage	Duration
Octenisan® body wash	Use once daily on the body. Apply undiluted to skin and leave for 1 minute before washing off. Also use as a shampoo on days 2 & 4.	5 days
<b>Second line:</b> Prontoderm® foam <sup>^</sup> (if unable to use Octenisan® due to allergy, limited washing facilities, restricted washing ability)	Apply once daily from head to toe (including hair) and leave to dry. It does not need to be washed off.	5 days
<b>Plus</b> Octenisan® nasal gel	Apply to the inside of both nostrils twice a day.	5 days
<b>Or</b> Mupirocin 2% nasal ointment	Apply to the inside of both nostrils three times a day.	5 days

<sup>1</sup> See [BNF](#) for appropriate use and dosing in specific populations, e.g., hepatic, or renal impairment, pregnancy, and breastfeeding.

<sup>^</sup> Note Bassetlaw follow different guidelines and use Prontoderm® foam as first line treatment.

\* On the advice of infection control only – Octenisan® wash mitts and shower caps (Amber 2) may be used in community patients unable to use the standard wash or Prontoderm® foam.

\*\*Naseptin® cream applied four times a day to both nostrils can be used as an alternative third line option. Recommended course lengths vary from 5 to 10 days depending on the indication. Naseptin has been reformulated and no longer contains arachis oil. **Please note** - there may still be old stock in the system which will contain arachis oil, so continue to consider peanut allergy risk.

**Patient Information leaflet - [Octenisan® wash](#)**

**Patient Information Leaflet - [Prontoderm® Foam](#)**