

A crossover intervention trial to evaluate the impact of rapid on-admission screening in preventing Methicillin Resistant Staphylococcus Aureus (MRSA) infection in surgery

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Registration date 05/09/2007	Overall study status Completed	<input type="checkbox"/> Protocol
Last Edited 01/12/2020	Condition category Infections and Infestations	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Study information

Scientific Title

A crossover intervention trial to evaluate the impact of rapid on-admission screening in preventing Methicillin Resistant Staphylococcus Aureus (MRSA) infection in surgery

Study objectives

To determine the effect of an early MRSA detection strategy on nosocomial MRSA infections in a cohort of surgical patients at a large teaching hospital.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Ethics approval received from the local Institutional Review Board (Commission centrale d'éthique de la recherche aux HUG) on the 18th August 2004 (ref: JSL/cg, 126-2004).

Study design

A prospective, interventional cohort study using a cross-over design

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

MRSA (Methicillin-resistant *Staphylococcus aureus*)

Interventions

We carried out a prospective, interventional cohort study using a cross-over design to compare the effect of two different MRSA control strategies (rapid MRSA screening plus standard control versus standard infection control only) on the acquisition of nosocomial MRSA infection.

The study was conducted in the surgical department of the University of Geneva Hospitals (365 beds and 13,280 admissions in 2004). Twelve wards (including abdominal surgery, orthopedics, urology, neurosurgery, cardiovascular surgery, thoracic surgery, plastic surgery and solid organ transplant) were enrolled in the study. The study population included all adult patients admitted to the surgical department for greater than 24 hours. Patients admitted for ambulatory surgery were excluded as they were considered to be at low risk of MRSA infection.

Each ward was assigned to 1 of the 2 study groups and enrolled according to a pre-specified agenda encompassing 4 study phases. Phase I (July to September 2004) comprised a baseline surveillance period without MRSA on-admission screening. Phase II (October 2004 to June 2005) consisted of a 9-month intervention period with application of the rapid screening tool in neurosurgery, orthopedics, plastic surgery, cardiovascular and thoracic surgery, whereas the remaining wards served as control units. Follow-up of MRSA infections was continued in all wards throughout the next 2 months (phase III, washout period). In September 2005, the wards were switched for a further 9 months (crossover phase) to balance the effect of possible ward-related confounding variables. In phase IV (September 2005 to May 2006), rapid MRSA screening was applied to patients in urology, transplant and abdominal surgery. Follow-up of those patients who were operated before May 31, 2006 was terminated by September 2006.

The main study intervention consisted of the introduction of a molecular technique to enable early detection of MRSA carriage by rapid screening of admitted patients (including both elective and emergency admissions) in the intervention units. Standard infection control measures applied to MRSA patients in all units comprised the following elements: 1. Contact

- isolation of identified MRSA carriers in flagged side or single rooms, whenever available, with dedicated material (gowns, gloves, masks)
2. Topical decolonisation (nasal mupirocin ointment and chlorhexidine body washing) of known MRSA carriers for 5 days
 3. Guidelines to adapt perioperative prophylaxis of MRSA carriers
 4. A computerised MRSA alert system

No preemptive isolation was installed for patients without history of MRSA carriage. During the study, no antibiotic stewardship program was implemented.

Intervention Type

Other

Phase

Not Specified

Primary outcome(s)

Number of patients with nosocomial MRSA infection acquired in surgery, expressed as incidence per 1000 patient-days.

Key secondary outcome(s)

1. Nosocomial MRSA acquisition rate (expressed as the rate of new MRSA cases detected by any type of clinical isolate in previously MRSA-free patients per 1000 patient-days)
2. The rate of surgical site infections (per 100 procedures) and other site-specific infections caused by MRSA

Completion date

30/09/2006

Eligibility

Key inclusion criteria

All patients admitted to the surgical department for greater than 24 hours

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Not Specified

Sex

Key exclusion criteria

Ambulatory surgery

Date of first enrolment

01/07/2004

Date of final enrolment

30/09/2006

Locations

Countries of recruitment

Switzerland

Study participating centre

Geneva University Hospitals

Geneva

Switzerland

CH-1211

Sponsor information

Organisation

The Geneva University Hospitals (Hopitaux Universitaires de Geneve [HUG]) (Switzerland)

ROR

<https://ror.org/01m1pv723>

Funder(s)

Funder type

Research organisation

Funder Name

Swiss National Science Foundation (Switzerland)

Alternative Name(s)

Schweizerischer Nationalfonds, Swiss National Science Foundation, Fonds National Suisse de la Recherche Scientifique, Fondo Nazionale Svizzero per la Ricerca Scientifica, Fonds National Suisse, Fondo Nazionale Svizzero, Schweizerische Nationalfonds, The Swiss National Science Foundation (SNSF), SNF, SNSF, FNS

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

Switzerland

Funder Name

The Geneva University Hospitals (Hopitaux universitaires de Geneve [HUG]) (Switzerland)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	Results	12/03/2008		Yes	No