ISRCTN06603006 https://doi.org/10.1186/ISRCTN06603006

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

Submission date
05/09/2007

Recruitment status
No longer recruiting

Registration date
05/09/2007

Overall study status
Completed

Last Edited
01/12/2020

Condition category
Infections and Infestations

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Dr Stephan Harbarth

Contact details
Geneva University Hospitals
Infection Control Program
Geneva
Switzerland
CH-1211
+41 (0)22 372 3357
stephan.harbarth@hcuge.ch

Additional identifiers

Protocol serial number
N/A

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