



Surgical site infections can be reduced by multimodal infection control programmes

Prospective interventional study at a large tertiary care centre in Catania, Italy

WHAT WAS INVESTIGATED?

Implementation of a multimodal infection programme in 20 surgical departments, including:

- commitment of surgeons and staff
- educational programme (e.g., seminars, feedback, posters)
- review of healthcare procedures
- training on handwashing
- improvements in the handling of medical equipment (single-patient medical instruments and enhanced cleaning of equipment)

- introduction of alcohol-based hand disinfectant
- introduction of a campaign to increase compliance with guidelines for antibiotic prophylaxis

A pilot investigation followed four 1-day point-prevalence surveys were performed, investigating the following parameter:

- the prevalence of surgical site infections (SSIs) and associated risk factors before and after implementation

WHAT WAS THE RESULT?

The rates of SSIs suggest a decreasing trend: from 16.4 infections to 8.2 infections per 100 surgical patients, that is a reduction of **50 %**.

The implementation of a multimodal infection programme including education, feedback and the dissemination of guidelines significantly reduced SSIs.





BACKGROUND

A crucial step in improving patient safety is the surveillance of healthcare-associated infections (HAIs). Surgical site infections (SSIs) are still a major patient safety concern. For example, it is repeatedly reported that implementation of guidelines for antibiotic prophylaxis among surgeons is difficult and non-compliance with the standard of care is widespread.

GOAL

The aim of the study was to assess the prevalence of SSIs before and after the implementation of a multimodal infection control programme. Moreover, risk factors for SSIs were defined.

DESIGN AND METHODS

The study was conducted in all 20 surgical departments of a large teaching hospital in Catania, Italy.

The 1-year study consisted of a pilot investigation and 4 single 1-day point-prevalence surveys (PPS) with an interval of 3 month each. PPS were conducted between January and October 2005 and assessed the prevalence of SSIs as well as associated risk factors. SSIs were defined according to the standard definitions of the Hospital in Europe Link for Infection Control through Surveillance (HELICS) project.

Following the first PPS, a multimodal infection control programme was established. It included an educational programme with seminars, feedback events and quality circles, training of staff in correct handwashing techniques, the introduction of alcohol-based hand disinfection gel, the enhanced cleaning and disinfection of medical equipment and the use of single-patient medical instruments. Additionally, a campaign to enhance the compliance with national guidelines on antibiotic prophylaxis was developed.

SSI prevalence was compared before and after implementation of the infection control programme.

RESULTS

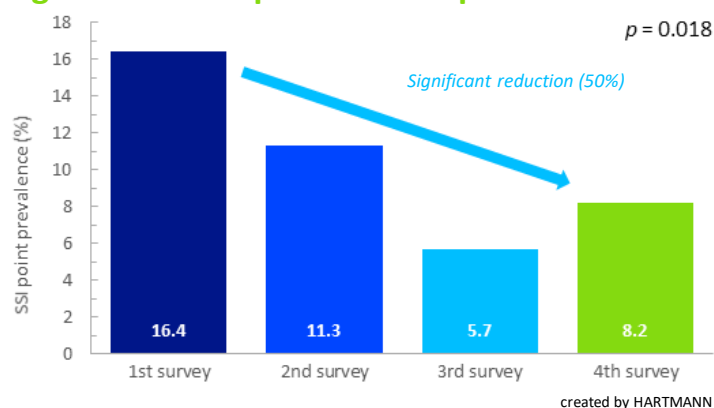
A total of 600 surgical patients were enrolled in the study with 634 surgical procedures performed.

The prevalence of SSIs decreased from 16.4 to 11.3, 5.7 and 8.2 infections per 100 surgical patients in the four surveys, respectively (Figure 1).

A multivariate analysis showed that age > 31 years, kidney insufficiency, and infection at admission significantly increased the risk of SSI.

The introduction of a campaign to increase compliance with guidelines for antibiotic prophylaxis revealed a low compliance of 44.7 %.

Figure 1: Development of SSI prevalence



CONCLUSION

A significant downward trend in SSI rates was achieved with the help of a multimodal infection control programme and specific risk factors for the development of an infection were identified. In addition, the study has demonstrated the importance of developing evidence-based guidelines to improve compliance with antimicrobial prophylaxis practices, ultimately reducing SSI rates.