

**Surgical site infections in Italian Hospitals: a prospective multicenter study**

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**Abstract**

Background

Surgical site infections (SSI) remain a major clinical problem in terms of morbidity, mortality, and hospital costs. Nearly 60% of SSI diagnosis occur in the postdischarge period.

However, literature provides little information on risk factors associated to in-hospital and postdischarge SSI occurrence. A national prospective multicenter study was conducted with the aim of assessing the incidence of both in-hospital and postdischarge SSI, and the associated risk factors.

Methods

In 2002, a one-month, prospective national multicenter surveillance study was conducted in General and Gynecological units of 48 Italian hospitals. Case ascertainment of postdischarge SSI was carried out using standardized surveillance methodology. To assess potential risk factors for SSI we used a conditional logistic regression model. We also reported the odds ratios of in hospital and postdischarge SSI.

Results

SSI occurred in 241 (5.2%) of 4,665 patients, of which 148 (61.4%) during in-hospital, and 93 (38.6%) during postdischarge period. Of 93 postdischarge SSI, sixty-two (66.7%) and 31 (33.3%) were detected through telephone interview and questionnaire survey, respectively. Higher SSI incidence rates were observed in colon surgery (17.8%), gastric surgery (12.5%), and appendectomy (8.1%). If considering risk factors for SSI, at multivariate analysis we found that emergency interventions, NNIS risk score, pre-operative hospital stay, and use of drains were significantly associated with SSI occurrence. Moreover, risk factors for total SSI were also associated to in-hospital SSI. Additionally, only NNIS, pre-operative hospital stay, use of drains, and antibiotic prophylaxis were associated with postdischarge SSI.

Conclusions

Our study provided information on risk factors for SSI in a large population in general surgery setting in Italy. Standardized postdischarge surveillance detected 38.6% of all SSI. We also compared risk factors for in-hospital and postdischarge SSI, thus providing additional information to that of the current available literature. Finally, a large amount of postdischarge SSI were detected through telephone interview, which underlines the importance of postdischarge surveillance methodology for its cost-effectiveness.