Successful reduction of surgical site infections

HOSPITAL DISCHARGE DATABASE FOR SSI SURVEILLANCE AFTER HIP OR KNEE ARTHROPLASTY

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OBJECTIVE:

Surgical site infections surveillance represents a key method of nosocomial infection control programmes worldwide. However, most SSI surveillance systems are considered to be poorly cost-effective regarding human and resources required for data collection and patient follow-up. This study aims to assess the efficacy of using the hospital discharge database (HDD) as a routine surveillance system for detecting hip or knee arthroplasty-related infections (HKAI).

METHODS:

A case-control study was conducted in patients hospitalized in the region Centre between 2008-2010. Cases were defined as HKAI extracted from HDD according to various algorithms using the ICD-10 and procedure codes. Controls were defined as hip or knee arthroplasty (HKA) without infection and were selected at random from HDD during the study period. The gold standard was defined according to the medical chart. Sensitivity (Se), specificity (Spe), positive predictive value (PPV) and negative predictive value (NPV) were calculated to evaluate the efficacy of the surveillance system.

RESULTS:

Among 18,265 hospital stays for HKA representing 17,388 patients, medical reports were checked for 1,010 hospital stays (989 patients). Overall, 530 cases were identified (incidence rate: 1%, 95%CI: 0.4%-1.6%) and 333 cases were detected by routine surveillance. As compared to 480 controls, Se was 98%, Spe 71%, PPV 63%, NPV 99%. Using more specific case definition, based on a sample of 681 hospital stays, Se was 97%, Spe 95%, PPV 87%, NPV 98%.

CONCLUSION:

This study demonstrated the potential of HDD for routine SSI surveillance in low-risk surgery, under conditions of having appropriate algorithm for selecting infections.