Letters to the Editor

Usefulness and Accuracy of Weekly Point-Prevalence Surveys in Active Surveillance for Healthcare-Associated Infections

To the Editor:

Considerable debate surrounds the performance of prospective active incidence or periodic prevalence surveys for surveillance of healthcare-associated infections. Until February 2002, when the Hospital Infection Committee was created, the Campus Bio-Medico University Hospital, a 126-bed hospital with 67 beds for surgical patients and 10 intensive care unit beds, had no hospital infection control surveillance program. Thus, there were no data on the extent of healthcare-associated infections in the hospital.

The Hospital Infection Committee decided to conduct weekly point-prevalence surveys to estimate the rate of healthcare-associated infections in the hospital and to evaluate the accuracy of this method (vs incidence surveillance) for detecting such infections. For comparison, periodic point-prevalence surveys and active incidence surveillance (using weekly systematic review of all clinical and microbiology laboratory records) were conducted simultaneously. Two physicians systematically reviewed the records of all discharged patients. Infections were defined using Centers for Disease Control and Prevention (CDC) criteria[1] and recorded on standardized forms. Microbiology laboratory records were reviewed each day for all pathogens isolated from hospitalized patients.

From March 2002 through March 2003 (ie, the study period), weekly point-prevalence surveys were conducted. Each Wednesday, a resident physician, trained in medical record review and the CDC definitions of healthcare-associated infection, reviewed the clinical records of all patients present that day to identify those with healthcare-associated infections. For each day on which a point-prevalence survey was conducted, a healthcare-associated infection rate was calculated for the entire hospital and for each clinical area (Figure).

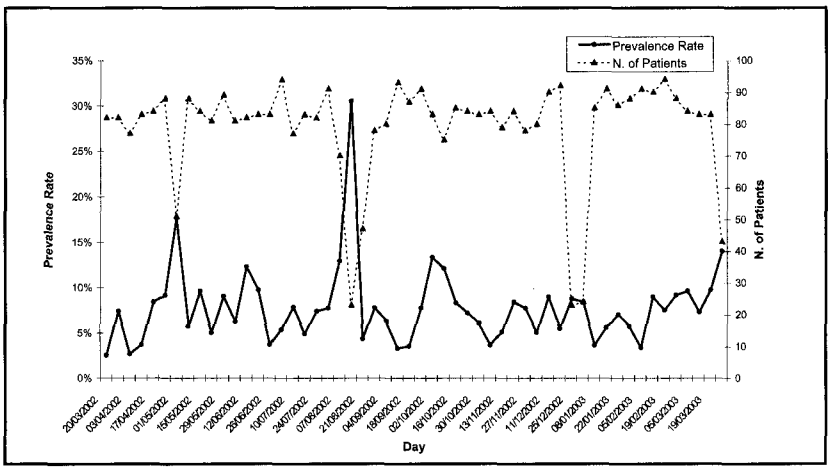

FIGURE. Weekly point-prevalence healthcare-associated infection rates for the Campus Bio-Medico University Hospital from March 2002 to March 2003.

During the study period, 234 healthcare-associated infections were detected by the active incidence surveillance method; 187 (80%) of these infections were detected by the point-prevalence surveys. The hospital-wide healthcare-associated infection rate by point-prevalence survey during the study period ranged from 2.44% to 30.43% (mean, 7.76%) (Figure). The average length of stay for patients with a healthcare-associated infection was 15.3 days (vs 5.5 days for the rest of the hospital population).

When clinical areas were examined, the gynecology and general surgery services had the highest average healthcare-associated infection rates (18.05% and 17.87%, respectively). The most frequent type of healthcare-associated infection was surgical site (37%), followed by urinary tract (32%), bloodstream or sepsis (23%), and pneumonia (8%). Almost 90% of the bloodstream infections occurred among patients in the gynecology and general surgery services, probably because these patients have a high rate of neoplastic or immunosuppressive conditions, undergo major surgical procedures, or both. During two time periods (May and August), apparently high prevalence rates of healthcare-associated infection occurred, probably because of low patient census (Figure), when elective admissions were closed and severely ill patients and those with healthcare-associated infections could not be discharged.

We sought to compare periodic point-prevalence surveys, which were more cost-efficient and used fewer personnel, with prospective incidence surveillance for detecting healthcare-associated infections and calculating their rates. Although several point-prevalence surveys have been reported,[2-7] most of them have been short-term.

Our results indicate that weekly point-prevalence surveys are a reliable surveillance tool for healthcare-associated infections. Using this approach, we were able to detect 80% of the healthcare-associated infections identified using the more traditional (but more time- and personnel-consuming) incidence surveillance method. We think that this point-prevalence surveillance approach could be useful to hospitals that do not have either the financial or the personnel resources to continuously perform prospective active incidence surveillance for healthcare-associated infections.

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Fine Needle Aspiration Cytology Without Needle Manipulation to Reduce the Risk of Occupational Infection in Healthcare Personnel

To the Editor:

Accidental sharps injury is a major cause of occupation-related transmission of infectious diseases.[1] Percutaneous injury, usually inflicted by a hollow-bore needle, is the most common mechanism of job-related human immunodeficiency virus infection in healthcare personnel.[2]

Public health authorities and committees for clinical laboratory standards guidelines for the protection of laboratory workers from job-related exposure to infectious diseases recommend that used needles not be recapped, removed from disposable syringes, or otherwise manipulated.[3]

Fine needle aspiration cytology (FNAC) is a widely accepted diagnostic procedure in which a hollow-bore device and the removal of the contaminated needle prior to expulsion of its contents are required.[4] The risk of injury by needle during FNAC appears to be low (0.12%),[5] but this still represents a real hazard.

TABLE
DIAGNOSTIC EFFICACY OF THE TWO METHODS OF FINE NEEDLE ASPIRATION CYTOLOGY

	FNAC Method	
	Traditional	**Modified**
Sensitivity	35/37 (94.6%)	42/45 (93.3%)
Specificity	42/44 (95.5%)	37/39 (94.9%)
Positive predictive value	35/37 (94.6%)	42/44 (95.5%)
Negative predictive value	42/44 (95.5%)	37/40 (92.5%)

FNAC = fine needle aspiration cytology.

However, there is a modified method of FNAC that eliminates the needle manipulation.[6] If the procedure is initiated with 2 mL of air in the syringe, after aspiration is finished, the residual air will be used to empty the needle without its manipulation.

Despite its apparent advantage, this modified technique has been insufficiently promoted and there have not been published studies of its diagnostic accuracy. Thus, we were impelled to compare these two FNAC methods (ie, conventional and modified) regarding the quantity and the quality of the cytologic material obtained with them.

The two methods were used in alternating order on each one of 365 palpable lesions on the head, neck, and breasts. The microscopic scoring system devised by Mair et al.[7] was used to compare the two methods regarding materials obtained. Sensitivity, specificity, and predictive values were determined for both methods using the biopsy result as the gold standard. Multiple logistic regression was used to identify independent predictors of achieving a diagnosis with each method.

The two techniques yielded similar diagnostic accuracy with values of more than 90% for all indicators (sensitivity, specificity, and predictive values) (Table). No statistically significant differences were observed between the two methods regarding the diagnostic adequacy of the cell samples obtained. The only differences observed were related to the order of use in a lesion: the best results were obtained with the first puncture applied, regardless of FNAC method.

FNAC is used by clinicians, radiologists, and cytopathologists for the diagnosis of superficial and deep-seated lesions. It can be performed without requiring manipulation of the contaminated needle, thus reducing the risk of needlestick while retaining diagnostic accuracy. Moreover, with this modified technique, less force is needed to create the required negative pressure in the syringe; however, patients did not relate differences in perceived pain.

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