Medical News

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Intranasal Mupirocin and Postoperative *Staphylococcus aureus* Infections

Patients with nasal carriage of *Staphylococcus aureus* have an increased risk of surgical-site infections caused by that organism. Treatment with mupirocin ointment can reduce the rate of nasal carriage and may prevent postoperative *S. aureus* infections. Perl and colleagues conducted a randomized, double-blind, placebo-controlled trial to determine whether intranasal treatment with mupirocin reduces the rate of *S. aureus* infections at surgical sites and prevents other nosocomial infections.

Of 4,030 enrolled patients who underwent general, gynecologic, neurologic, or cardiothoracic surgery, 3,864 were included in the intention-to-treat analysis. Overall, 2.3% of mupirocin recipients and 2.4% of placebo recipients had *S. aureus* infections at surgical sites. Of the 891 patients (23.1% of the 3,864 who completed the study) who had *S. aureus* in their anterior nares, 444 received mupirocin and 447 received placebo. Among the patients with nasal carriage of *S. aureus*, 4.0% of those who received mupirocin had nosocomial *S. aureus* infections, as compared with 7.7% of those who received placebo (odds ratio for infection, 0.49; 95% confidence interval, 0.25 to 0.92; $P = .02$).

The researchers concluded that prophylactic intranasal application of mupirocin did not significantly reduce the rate of *S. aureus* surgical-site infections overall, but it did significantly decrease the rate of all nosocomial *S. aureus* infections among the patients who were *S. aureus* carriers.

FROM: Perl TM, Cullen JJ, Wenzel RP, et al. Intranasal mupirocin to prevent postoperative *Staphylococcus aureus* infections. *N Engl J Med* 2002;346:1871-1877.

Medical Record Reliability for Estimating Adverse Event Rates

The data used by the U.S. Institute of Medicine to estimate deaths from medical errors come from a study that relied on nurse and physician reviews of medical records to detect the errors. Thomas and colleagues from the Brigham and Women's Hospital and Harvard School of Public Health conducted a review of medical records of patients hospitalized in Utah and Colorado in 1992 to measure the reliability of medical record review for detecting adverse events and negligent adverse events. After three independent reviews of 500 medical records, the following were measured: reliability and the effect of varying criteria for reviewer confidence in and reviewer agreement about the presence of adverse events.

The researchers found that for agreements in judgments of adverse events among the three sets of reviews, the kappa statistics ranged from 0.40 to 0.41 (95% confidence intervals ranged from 0.30 to 0.51) for adverse events and from 0.19 to 0.23 (confidence intervals, 0.05 to 0.37) for negligent adverse events. Rates for adverse events and for negligent adverse events varied substantially depending on the degree of agreement and the level of confidence that was required among reviewers.

The researchers concluded that the estimates of adverse event rates from medical record review, including those reported by the Institute of Medicine in its 2000 report on medical errors, are highly sensitive to the degree of consensus and confidence among reviewers.

FROM: Thomas EJ, Lipsitz SR, Studdert DM, Brennan TA. The reliability of medical record review for estimating adverse event rates. *Ann Intern Med* 2002;136:812-816.

Chlorhexidine Versus Povidone-Iodine for Vascular Site Care: A Meta-Analysis

Bloodstream infections related to the use of catheters, particularly central line catheters, are an important cause of patient morbidity and mortality and increased healthcare costs. This meta-analysis, conducted by Chaiyakunapruk and colleagues from the Naresuan University, Pitsanuloak, Thailand, evaluated the efficacy of skin disinfection with chlorhexidine gluconate compared with povidone-iodine solution in preventing catheter-related bloodstream infection. Data sources included multiple computerized databases (1966 to 2001), reference lists of identified articles, and queries of principal investigators and antiseptic manufacturers. Randomized, controlled trials comparing chlorhexidine gluconate with povidone-iodine solutions for catheter-site care were selected for the study. Using a standardized form, two reviewers abstracted data on study design, patient population, intervention, and incidence of catheter-related bloodstream infection from all included studies.

Eight studies involving a total of 4,143 catheters met the inclusion criteria. All studies were conducted in a hospital setting, and various catheter types were used. The summary risk ratio for catheter-related bloodstream infection was 0.49 (95% confidence interval, 0.28 to 0.88) in patients whose catheter sites were disinfected with chlorhexidine gluconate instead of povidone-iodine. Among patients with a central vascular catheter, chlorhexidine gluconate reduced the risk for catheter-related bloodstream infection by 49% (risk ratio, 0.51; confidence interval, 0.27 to 0.97).

The authors concluded that the results suggest that the incidence of bloodstream infections is significantly reduced in patients with central vascular lines who receive chlorhexidine gluconate versus povidone-iodine for inser-