

Medical News

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

Bloodstream infections related to the use of catheters, particularly central-line catheters, are an important cause of patient morbidity, mortality, and increased healthcare costs. Researchers from Naresuan University in Pitsanulok, Thailand, conducted a meta-analysis to evaluate the efficacy of skin disinfection with chlorhexidine gluconate compared with povidone-iodine solution in preventing catheter-related bloodstream infection.

Multiple computerized databases (1966 to 2001) were used, in addition to 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 reviewed. 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; 95% confidence interval, 0.27 to 0.97).

The researchers concluded that the incidence of bloodstream infections was significantly reduced in patients with central vascular lines who received chlorhexidine gluconate versus povidone-iodine for insertion-site skin disinfection. Use of chlorhexidine gluconate was a simple and effective means of reducing vascular catheter-related infections.

FROM: Chaiyakunapruk N, Veenstra DL, Lipsky BA, Saint S. Chlorhexidine compared with povidone-iodine solution for vascular catheter-site care: a meta-analysis. *Ann Intern Med* 2002;136:792-801.

Hepatitis B e Antigen Positivity Increases the Risk of Hepatocellular Carcinoma

The presence of hepatitis B e antigen (HBeAg) in serum indicates active viral replication in hepatocytes. HBeAg is thus a surrogate marker for the presence of hepatitis B virus DNA. Yang and colleagues from the

National Taiwan University, Taipei, conducted a prospective study to determine the relationship between positivity for hepatitis B surface antigen (HBsAg) and HBeAg and the development of hepatocellular carcinoma.

In 1991 and 1992, 11,893 men (age range, 30 to 65 years) without evidence of hepatocellular carcinoma from seven townships in Taiwan were enrolled. Serum samples obtained at the time of enrollment were tested for HBsAg and HBeAg by radioimmunoassay. The diagnosis of hepatocellular carcinoma was ascertained through data linkage with the computerized National Cancer Registry in Taiwan and with death certificates. Multiple regression analysis was performed to determine the relative risk of hepatocellular carcinoma among men who were positive for HBsAg alone or for HBsAg and HBeAg, as compared with those who were negative for both.

There were 111 cases of newly diagnosed hepatocellular carcinoma during 92,359 person-years of follow-up. The incidence rate of hepatocellular carcinoma was 1,169 cases per 100,000 person-years among men who were positive for both HBsAg and HBeAg, 324 per 100,000 person-years for those who were positive for HBsAg only, and 39 per 100,000 person-years for those who were negative for both. After adjustment for age, gender, the presence or absence of antibodies against hepatitis C virus, cigarette smoking status, and use or nonuse of alcohol, the relative risk of hepatocellular carcinoma was 9.6 among men who were positive for HBsAg alone and 60.2 among those who were positive for both HBsAg and HBeAg, as compared with men who were negative for both.

The authors concluded that positivity for HBeAg is associated with an increased risk of hepatocellular carcinoma.

FROM: Yang HI, Lu SN, Liaw YF, et al. Hepatitis B e antigen and the risk of hepatocellular carcinoma. *N Engl J Med* 2002;347:168-174.

Feeding Tubes Are a Reservoir for Nosocomial Antibiotic-Resistant Pathogens

Patients and their surroundings are known reservoirs for nosocomial pathogens. Enteral feeding tubes and formula are not thought of as reservoirs for nosocomial organisms. Mehall and colleagues from the University of Arkansas for Medical Sciences, Little Rock, conducted a prospective observation study comparing methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* (VRE) cultured from nosocomial infec-