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## **A RANDOMIZED CONTROLLED TRIAL COMPARING POVIDONE-IODINE AND CHLORHEXIDINE TO PREPARE THE OPERATIVE FIELD FOR VAGINAL HYSTERECTOMY**

### **Hypothesis / aims of study**

To compare the efficacy of two commonly used antiseptic solutions for cleansing the vagina prior to hysterectomy.

### **Study design, materials and methods**

Between October 2002 and September 2003, fifty-one patients undergoing vaginal hysterectomy were randomized to receive a surgical scrub with either povidone iodine or chlorhexidine. Standard prophylactic techniques including preoperative intravenous antibiotics were used for both groups. Quantitative aerobic and anaerobic bacterial cultures of the entire vaginal field were obtained from both groups preoperatively; 30 minutes after the surgical scrub; and hourly thereafter throughout each operation. A specimen was considered contaminated if the total bacterial colony counts were  $\geq 5000$  colony forming units/ml. Aerobic cultures were performed using 5% sheep blood agar and chocolate agar plates. Anaerobic cultures were performed using brucella blood agar, phenylethyl alcohol agar kanamycin vancomycin agar, and *Bacteroides* bile esculin agar. The staff in the microbiology lab was blinded as to the randomization scheme. At each time interval, the proportions of contaminated specimens in each group were compared using the 2-sided Pearson Chi square test. The two groups were compared in terms of age, BMI, gravity, parity, race and exogenous hormone use using the independent samples T-test. A prospective power calculation was performed based on a pilot study in which 52% (16 of 31 patients) of vaginal cultures obtained 30 minutes after povidone iodine surgical scrub resulted in a contaminated vaginal field. We decided that a reduction in the proportion of "contaminated" specimens from 52% to 10% would be significant. With 22 patients in each arm we had an 80% power to detect that reduction with an alpha of 0.05.

### **Results**

As expected, there were no significant differences between the groups with respect to age, BMI, gravity, parity, race, or exogenous hormone use. Mean preoperative colony counts for the povidone iodine and chlorhexidine groups were 211,957 and 172,296 respectively ( $p=0.104$ ). At TIME 1 (30 minutes after scrub), 63% (17/27) of culture specimens from the povidone iodine group and 22% (5/23) of the chlorhexidine group were classified as contaminated ( $p=0.003$ ) RR=6.12; 95% CI = 1.73, 21.61. At TIME 2 (90 minutes after scrub), 36% (4/11) of the povidone iodine and 14% (2/14) of the chlorhexidine groups were classified as contaminated ( $p=0.12$ ) RR3.43; 95% CI = 0.49, 23.8.

### **Interpretation of results**

Chlorhexidine was more effective for decreasing the bacterial colony counts in the operative field during vaginal hysterectomy.

### **Concluding message**

Widespread use of chlorhexidine rather than povidone iodine to prepare the vagina for surgery might reduce the rate of operative site infections following vaginal hysterectomy.