Letter to the Editor
Ticarcillin-Clavulanic Acid for Prophylaxis of Postpartum Puerperal Infections

Eighty-five percent of nulliparous women with rupture of membranes greater than 6 h and who are delivered by cesarean section for cephalopelvic disproportion develop febrile morbidity if not given perioperative antimicrobial agents (1-4). Several investigators have found that perioperative antimicrobial therapy appreciably reduces this complication of cesarean section in such high-risk women (1-3). The purpose of the present investigation was to compare the efficacy of ticarcillin, a broad-spectrum antibiotic, plus clavulanic acid, a β-lactamase inhibitor, with that of cefoxitin. After informed consent was obtained, 202 high-risk women were randomized to receive either ticarcillin-clavulanic acid (3.1 g) or cefoxitin (2 g) after the umbilical cord was clamped and two subsequent doses at 6-h intervals. Bacteriological cultures were obtained directly from the endometrial cavity at the time of cesarean section. Puerperal infection was defined as an oral temperature of 38.3°C on two occasions at least 6 h apart, excluding postoperative day 1, and the presence of uterine or parametral tenderness.

A total of 103 women received the combination of ticarcillin and clavulanic acid, and 27 (26%) subsequently developed postoperative puerperal infection. Similarly, of the 99 women receiving cefoxitin, 26 (26%) developed postoperative puerperal infection. Of these 53 women with puerperal infection, 9 (17%) had a prolonged febrile course due to localized pelvic cellulitis palpable as firm, nonfluctuant but tender mass. Of these nine, six received cefoxitin prophylactically and three received ticarcillin-clavulanic acid (P = not significant). Overall, 154 of the 202 patients (76%) had positive cultures at the time of cesarean section, with a mean of 2.6 isolates per patient. Of the 395 isolates, 154 were anaerobic and 241 were aerobes. The most common anaerobic isolates were Bacteroides species, with Bacteroides bivius being the single most prevalent isolate (n = 53; 34%). The single most prevalent aerobic isolates were group D streptococci (n = 44; 18.3%), followed by group B streptococci (n = 40; 16.6%). Gram-negative bacilli accounted for an additional 10.4% of the aerobic isolates.

Of the isolates, 3 (1%) were resistant to ticarcillin-clavulanic acid, 18 (5%) were resistant to ticarcillin without clavulanic acid, and 42 (11%) were resistant to cefoxitin. Although more isolates were resistant to cefoxitin than to the combination of ticarcillin-clavulanic acid (P < 0.05), there was no difference between the clinical efficacies of these two antibiotic regimens. These data indicate that the combination of ticarcillin and the β-lactamase inhibitor clavulanic acid is efficacious as prophylactic therapy for postpartum puerperal infection in high-risk women undergoing cesarean section. There is no unanimity regarding the pathogenicity of the group D streptococcus in female pelvic infections. Its emergence as a significant pathogen in the future remains a possibility, and combinations such as ticarcillin plus clavulanic acid for prophylaxis may therefore be advantageous.

LITERATURE CITED

Susan M. Cox
Larry C. Gilstrap III*
Kenneth J. Leveno
Roger E. Bawdon
Department of Obstetrics and Gynecology
The University of Texas Health Science Center at Dallas
5323 Harry Hines Boulevard
Dallas, Texas 75235-9032

* Corresponding author.