Terbutaline

To the Editors: We read with interest the study by Guinn et al (Guinn DA, Goepfert AP, Owen J, Wenstrom KD, Hauth JC. Terbutaline pump maintenance therapy for prevention of preterm delivery: a double-blind trial. Am J Obstet Gynecol 1998;179:874-8) regarding subcutaneous terbutaline therapy for prevention of preterm delivery. This study unfortunately tells us nothing about the efficacy of this therapy as it is commonly prescribed by obstetricians. During the study period (November 1994–April 1997) Guinn et al discharged their patients home without daily nursing contact or home uterine contraction monitoring, both of which are the standard of care and are necessary for the use of subcutaneous terbutaline therapy outside the hospital setting. Objective data are essential for individual dosage changes (increased drug delivery during times of documented increased uterine activity), as one would do in the hospital. When daily monitoring and nursing contact have been included, positive efficacy and safety results have been confirmed. Terbutaline dosage in the study of Guinn et al was determined without appropriate consideration of individual body mass index, contraction activity, or cervical status, as is the standard practice. In light of the 3- to 4-hour half-life of terbutaline during pregnancy and the fact that no patients received scheduled drug boluses between 11 PM and 7 AM (usual periods of peak contraction activity), patients were likely to have subtherapeutic drug levels by morning.

Most patients enrolled by Guinn et al were too far advanced in cervical dilatation and effacement to benefit from any maintenance tocolytic therapy. Indeed, in 50% of women receiving terbutaline the cervix was ≥3 cm dilated and ≥50% effaced, with 25% of patients having cervical dilatation of ≥4 cm and effacement of ≥70%. Thus patients had little chance of attaining the already optimistic 22-week expected prolongation with respect to placebo. Many subjects were also enrolled late in pregnancy (mean 31 weeks’ gestation), such that the expected pregnancy prolongation of 6 weeks for the terbutaline group was often not even possible because treatment was discontinued per protocol at 36 weeks’ gestation. More troubling is that only recurrent preterm labor at <34 weeks’ gestation was treated, even though 12 patients (23%) were delivered at 34 to 37 weeks’ gestation and might have benefited from tocolysis. Additionally, 46% of patients in the terbutaline group dropped out of the study. Our experience is to expect about a 6% dropout rate when traditional programs delivering this therapy are used. With only 32 patients of this predominantly (94%) public assistance population completing the study, these results can hardly be general-ized to other patient populations as Guinn et al suggest. Finally, the comments of Guinn et al regarding the published safety data on this therapy neglect the largest published review (n = 8000 cases) of this therapy, which found an extremely low rate of adverse events and no maternal deaths related to this treatment.

We are uncertain why Guinn et al chose such an unconventional delivery of this therapy, except perhaps for their reluctance to use traditional home health programs that offer these services as alternatives to costly inpatient care. Home health programs are routinely used in other fields of medicine. Because so many clinical considerations were ignored by Guinn et al, it seems that the study was undertaken specifically to show a lack of benefit from this therapy.

John Elliott, MD
Good Samaritan Regional Medical Center, Phoenix, AZ 85006
Fung Lam, MD
California-Pacific Medical Center, San Francisco, CA 94118
John Morrison, MD
Department of Obstetrics and Gynecology, University of Mississippi Medical Center, University of Mississippi, Jackson, MS 39216

REFERENCES

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Reply

To the Editors: We appreciate the interest expressed by Elliott et al in our report and welcome the opportunity to respond to their comments and their personal use of this unproven technology. These investigators make several points regarding our study design. Their first concern is that we studied the terbutaline pump without concomitant home uterine activity monitoring and daily nursing support. Our goal was to determine whether continuous subcutaneous terbutaline administration had independent value. The recently published randomized trial of home uterine activity monitoring of Dyson et al demonstrated beyond reasonable doubt that the use of home uterine activity monitoring does not prevent premature births. The American College of Obstetricians and Gynecologists has consistently discouraged the use of home uterine activity monitoring and has sent representatives to speak against the use of this technology at sev-