Educational Program For Premature Labor

John W. Bachman, M.D., Charles S. Field, M.D., and Cynthia E. Hammersley, B.S.

In spite of advances in prenatal care, the rate of prematurity has remained relatively constant at 7 percent. Prematurity accounts for 75 percent of perinatal mortality.[1] The benefit of tocolytic treatment is diminished, because 70 percent to 80 percent of patients in preterm labor do not seek help until membranes have ruptured or cervical dilation is too advanced for treatment to be effective.[2,3] Risk-scoring can be used to define a population at higher risk for premature labor, but 66 percent to 80 percent of preterm births do not come from this group.[4-6] Because there is such a large, unpredictable population experiencing premature labor, physicians must view all pregnancies as being at risk for this problem.

All comprehensive approaches to the prevention of premature labor involve patient educational programs that serve to make the patient aware of premature labor.[7-10]

After reviewing current practices at the Mayo Clinic, we formed the consensus that an educational program on premature labor was important for the following reasons:

1. An educational program is effective in preventing premature birth in a low-risk pregnancy
2. An educational program will enhance a patient's knowledge of what to do about concerns with labor, i.e., whom to call and where to go
3. With increasing malpractice suits for failure to give information on various problems of pregnancy, an effective and reproducible program for prevention of premature birth would document the practice of informing patients about premature labor

Having determined the value of education, we developed a method to ensure that most of our patients would receive the education in a timely and convenient manner. This program was offered through the use of a videotape presented at the time of the 1-hour oral glucose challenge test (OGCT), which is recommended between 24 and 28 weeks of gestation.[11]

We studied the effectiveness of the videotaped educational program by evaluating compliance of patients, by using a survey of patients' experience with the program, and by checking records to ensure that the technique did not inappropriately increase visits to the hospital by worried patients.

Methods

From 22 February 1990 to 22 May 1990, 418 patients were screened for diabetes using the 1-hour OGCT. The patients were asked to complete a questionnaire (anonymously) after viewing a videotape that discussed premature labor. A nurse was present to distribute literature, and telephone numbers were available if patients wanted to call with questions. The videotape was a commercially available program entitled *Preventing Preterm Birth*, produced in 1988 by Inland Empire Prenatal Center, Sacred Heart Medical Center, Spokane, WA. The authors had no financial interest in the videotape and selected it after reviewing others.

Results

During this study, 418 patients completed the 1-hour OGCT and also viewed the videotape; 354 patients (85 percent) completed the survey. More than 95 percent of the patients who were pregnant and who were seen prenatally at 28 weeks completed the 1-hour OGCT. None of the patients refused to watch the videotape.

Results of the survey were as follows: 299 patients (85 percent) thought the videotape was helpful, 323 (91 percent) thought it was informative, and 276 (78 percent) thought it was understandable. After viewing the videotape, 343 patients (97 percent) believed that they could recognize the symptoms of premature labor, and 344 said they would know what to do if they had symptoms or questions about premature labor. Table 1 summarizes the results of the survey.

Submitted, revised, 20 February 1992.

From the Department of Family Medicine and the Department of Obstetrics and Gynecology, Mayo Clinic and Mayo Foundation, Rochester, MN. Address reprint requests to John W. Bachman, M.D., Mayo Clinic, 200 First Street SW, Rochester, MN 55905.

Table 1. Results of Survey Completed by Patients ($n = 354$) after Viewing an Educational Videotape at the Time of the Oral Glucose Challenge Test.

Variable	No. of Patients
Video was considered	
Helpful	299
Informative	323
Understandable	276
Confusing	1
Not useful	0
Other information was received on premature labor before screening	
Yes	122
No	230
No answer	2
Other information was received via	
Nurses in clinic	15
Physician	75
Education class	30
Other	23
Information was considered important	
Yes	346
No	4
Maybe	1
Patients believed they could recognize the symptoms of premature labor after watching the video	
Yes	343
No	4
No answer	7
Patients knew how to contact a nurse or physician with questions or symptoms of premature labor	
Yes	344
No	3
No answer	7

Discussion

A previous study has also evaluated an educational program in which pregnant patients viewed videotapes.[12] Patients in the Bronx Municipal Hospital Center were offered a class that involved a 15-minute videotape followed by a question-and-answer session. Patients who were at 24 weeks of gestation or longer were recruited from the waiting room. From a study population of 2326 patients, 487 received the program (21 percent). Those participating in the class had an improvement in the mean length of gestation, and birth weights were increased. There were no statistically significant differences, however, between patients who completed the class and those who did not. The authors concluded that the educational program was relatively inexpensive and that it was an important component of a preterm prevention program. A later study at the same institution demonstrated that the patients had significant knowledge retention.[13]

This study showed that our educational program (consisting of a videotape given at the time of the 1-hour OGCT) was helpful in reaching a large group of patients at risk for premature labor and was offered in a convenient and timely manner.

Each pregnant patient received written information at the initial visit concerning the preterm labor and prenatal classes offered in the first and third trimesters. After the educational program, however, 70 percent of the patients surveyed claimed that they had not been familiar with the information concerning recognition and procedures for dealing with premature labor.

Most patients who answered the survey found the materials useful. Those who did not find it useful had previous experience with preterm labor either as a patient or as a health provider. The literature already documents the effectiveness of videotapes for retention of information in a pregnant population,[13] so we did not administer a test after the program.

We found that use of the videotape did not result in large numbers of worried patients coming to the hospital because they were concerned about premature labor. Nine patients who had viewed the videotape were observed for possible premature labor (they did not require treatment). In contrast, 6 patients who had not seen the educational program were observed for possible premature labor. This result was desired and expected; if patients are sensitized to the problems of premature labor, then more patients would be expected to visit the hospital with possible symptoms of premature labor. If symptoms progress, they are in the hospital unit where they can receive treatment. If they do not have premature labor, they can go home after a few hours.

We found that 3 of 23 patients had premature labor before an OGCT could be done (i.e., before 28 weeks of gestation). Consequently, our method of education would reach most — but not all — patients who have premature labor.

The videotape shown with the OGCT provided information to most patients before premature labor developed. In our community, more than 60 percent of women work. Providing an educational program at a time when patients are already involved with clinical testing makes

sense compared with arranging separate education sessions.

No patient refused to watch the videotape, and because more than 95 percent of pregnant patients receive an OGCT, the videotape was a success in sensitizing the patients to the problems of premature labor. There was a one-time expense for equipment, which consisted of a videocassette recorder, a television, and the videotape. The staff persons who administered the OGCT would start the videotape, give written information, and refer questions to appropriate personnel.

Clinicians find it advantageous to see patients after results of the OGCT are given and before possible symptoms of preterm labor occur. The physician might have an easier job discussing the subject of preterm labor with educated patients who have some basic understanding of the issues (instead of the large proportion of patients who express ignorance of the subject). Clinicians have asked that other materials concerning the third trimester be introduced at the OGCT. Suggestions about fetal kick counts, exercise activities, and warning signs of a problem pregnancy could also be incorporated at the time of the OGCT.

In summary, this study showed that an educational program conducted during the OGCT is inexpensive and is accepted and perceived as useful by the patients. The videotape provided a frame of reference for clinicians and basic background information to patients. Although this study was not designed to demonstrate an effect on outcomes in premature labor, no negative results were found other than a small portion of premature labors that occurred before the OGCT. On the basis of this demonstration, clinicians might want to consider incorporating a videotaped educational program at the time of the OGCT in their comprehensive approach to premature labor.

References

1. Quilligan EJ, Little AB, Oh W, Catz C, Alexander D, Cornblath M. An evaluation and assessment of the state of science in pregnancy, birth, and infant. In: Truss TJ Jr. Child health and human development: an evaluation and assessment of the state of the science. Bethesda, MD: National Institutes of Health, 1981:42-114. (NIH Publication no. 82-2304).
2. Zlatnik FJ. The applicability of labor inhibition to the problem of prematurity. Am J Obstet Gynecol 1972; 113:704-6.
3. Katz M, Gill PJ, Newman RB. Detection of preterm labor by ambulatory monitoring of uterine activity: a preliminary report. Obstet Gynecol 1986; 68:773-8.
4. Arias F, Tomich P. Etiology and outcome of low birth weight and preterm infants. Obstet Gynecol 1982; 60:277-81.
5. Mann LI, Baker DA, Gallant J. Dealing with the sources of low birthweight. Comtemp OB/GYN 1981; 18:141-7.
6. Meis PJ, Ernest JM, Moore ML. Causes of low birth weight births in public and private patients. Am J Obstet Gynecol 1987; 156:1165-8.
7. Papiernik E, Bouyer J, Yaffee K, Winisdorffer G, Collin D, Dreyfus J. Women's acceptance of a preterm birth prevention program. Am J Obstet Gynecol 1986; 155:939-46.
8. Herron MA, Katz M, Greasy RK. Evaluation of a preterm birth prevention program: preliminary report. Obstet Gynecol 1982; 59:452-6.
9. Meis PJ, Ernest JM, Moore ML, Michielutte R, Sharp PC, Buescher PA. Regional program for prevention of premature birth in northwestern North Carolina. Am J Obstet Gynecol 1987; 157:550-6.
10. Papiernik E. Proposals for a programmed prevention policy of preterm birth. Clin Obstet Gynecol 1984; 27:614-35.
11. Nelson RL. Diabetes and pregnancy: control can make a difference. Mayo Clin Proc 1986; 61:825-9.
12. Andersen HF, Freda MC, Damus K, Brustman L, Merkatz IR. Effectiveness of patient education to reduce preterm delivery among ordinary risk patients. Am J Perinatol 1989; 6:214-7.
13. Freda MC, Damus K, Andersen HF, Brustman LE, Merkatz IR. A "PROPP" for the Bronx: preterm birth prevention education in the inner city. Obstet Gynecol 1990; 76(Suppl 1):93S-96S.