Antepartum uterine contraction patterns in twin pregnancies with and without preterm labor and delivering before or after 36 weeks

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OBJECTIVE: The purpose of this study was to identify differences in antepartum uterine contraction frequency (UCF) in twin pregnancies with and without preterm labor (PTL).

STUDY DESIGN: Twin gestations enrolled for outpatient surveillance with twice daily electronic uterine activity monitoring and telephonic nursing assessment, without interventional delivery were identified. Mean UCF for each gestational week was compared between women without PTL or preterm delivery (PTD) < 36 weeks (controls) and those with a PTL diagnosis delivering at < 36 weeks (PTL/PTD group), and those with PTL with delivery ≥ 36 weeks (PTL/GAD ≥ 36 group).

RESULTS: Data from 7891 patients with 267,840 monitored hours were analyzed. UCF at each gestational week was significantly higher for patients experiencing PTL with or without PTD compared to control. UCF was similar for patients with PTL with or without PTD < 36.

CONCLUSION: Twin pregnancies complicated with PTL have a higher UCF than those that do not experience PTL. Outpatient surveillance may be beneficial in this population.

Key words: home uterine contraction monitoring, preterm labor, twin gestation

Al most 60% of twin pregnancies deliver preterm (<37 completed weeks) and almost 12% deliver very preterm (<32 completed weeks). The primary reason for prematurity in twin pregnancies is spontaneous preterm labor (PTL).

Previous investigators have examined uterine contraction frequency (UCF) data that were blinded to the patient and her physician, thus not used in the clinical management process. Newman et al noted that differences in antepartum UCF exist between twin and singleton pregnancies and in women delivering at term vs preterm, though they concluded that the differences were too small to have significant predictive value. The purpose of the present study was to examine UCF in twin pregnancies with and without PTL enrolled for outpatient surveillance where this data were used in the clinical management process.

MATERIALS AND METHODS

Included for analysis were data from twin gestations enrolled for outpatient PTL management services having spontaneous onset of labor. The referral for outpatient services was made by each patient’s individual health care provider. Enrolled patients consented to the use of their deidentified data for research and reporting purposes. The outpatient PTL management program included patient education from an experienced perinatal nurse regarding signs and symptoms of PTL, twice-daily electronic monitoring of UCF, and telephonic nursing assessment. UCF data were assessed by a nurse, placed into context with patient-reported subjective symptoms, and used to make clinical recommendations regarding patient activity, unscheduled physician office or hospital visits, and outpatient tocolytic adjustments.

The control group was composed of women with delivery at ≥36.0 weeks without any antepartum PTL diagnosis or treatment. Group 2 consisted of women experiencing PTL that delivered at <36 weeks, and group 3 consisted of women experiencing PTL but delivered at ≥36.0 weeks. The maximum UCF was determined for each monitored day per patient for recordings obtained at 24-34.9 weeks’ gestation. The maximum UCF per hour/per day was identified as percent of monitored hours with >2, >4, or >6 monitored contractions. Data were analyzed using various parametric and nonparametric statistical tests as appropriate. Pearson’s ρ was utilized to test correlation between gestational week and maximum UCF within each group.

RESULTS

Data from 7891 twin pregnancies with 267,840 monitored hours were analyzed. Twin pregnancies experiencing PTL (with or without delivery at <36 weeks) were more likely to have a history of PTD or have a cerclage in the present pregnancy (data not shown). In the population studied, PTL complicated 7235 of 7891 twin pregnancies (91.7%). Of those patients with PTL (n = 7235), 4870 (67.3%) delivered at <36 weeks and...
Patients experiencing PTL with or without PTD (Table). Maximum UCF at $/H11022$ percentage of monitored hours with UCF of delivering before and after 36 weeks. Am J Obstet Gynecol

Within each study group there is a significant positive, but weak association between gestational age and mean maximum UC frequency (group 1: control: $/H11021\ learn of the defined context with maternal signs and symptoms of PTL and utilized to trigger further assessment and evaluation. Continuing studies should focus on identifying women at risk for preterm delivery and utilization of clinical interventions aimed at improving perinatal outcome. The role of outpatient surveillance should be revisited.

REFERENCES