



## Improved perinatal survival of monoamniotic twins with intensive inpatient monitoring

Kent D. Heyborne, MD,<sup>a</sup> Richard P. Porreco, MD,<sup>b</sup> Thomas J. Garite, MD,<sup>c</sup> Kimberly Phair, RN,<sup>d</sup> Diana Abril, RN,<sup>d</sup> for the Obstetrix/Pediatric Research Study Group

*Department of Obstetrics and Gynecology, Swedish Medical Center, Englewood, Colo,<sup>a</sup> Department of Obstetrics and Gynecology, Presbyterian St. Luke's Medical Center, Denver Colo,<sup>b</sup> Department of Obstetrics and Gynecology, University of California Irvine, Orange, Calif,<sup>c</sup> and Obstetrix/Pediatric Research Study Group<sup>d</sup>*

Received for publication February 27, 2004; revised May 21, 2004; accepted June 2, 2004

### KEY WORDS

Monoamniotic  
Twins  
Fetal surveillance  
Intrauterine fetal  
death

**Objective:** The purpose of this study was to evaluate the impact of routine hospitalization for fetal monitoring on the perinatal survival and neonatal morbidity of monoamniotic twins.

**Study design:** This was a multicenter retrospective cohort analysis of 96 monoamniotic twin gestations from 11 university and private perinatal practices. Overall mortality rates were calculated. The risk of intrauterine fetal death and neonatal morbidity was compared among women who were observed as inpatients versus outpatients.

**Results:** The overall mortality rate from enrollment was 19.8% (mean gestational age at enrollment, 17.4 weeks). The perinatal mortality and corrected perinatal mortality rates were 15.4% and 12.6%, respectively. Eighty-seven women had both twins who were surviving at 24 weeks of gestation; 43 women were admitted electively for inpatient surveillance at a median gestational age of 26.5 weeks; the remainder of the women were followed as outpatients and admitted only for routine obstetric indications (median gestational age, 30.1 weeks). No intrauterine fetal deaths occurred in any hospitalized patient. The risk of intrauterine fetal death in women who were followed as outpatients was 14.8% (13/88) versus 0 for women who were followed as inpatients ( $P < .001$ ). There also were statistically significant improvements in birth weight, gestational age at delivery, and neonatal morbidity for women who were followed as inpatients.

**Conclusion:** We observed improved neonatal survival and decreased perinatal morbidity among women who were admitted electively for inpatient fetal monitoring.

© 2005 Elsevier Inc. All rights reserved.

Monoamniotic twins are at high risk of fetal death. Complications include those seen with other twin gestations in general (premature labor, preeclampsia, discordant growth) and other monozygotic twin preg-

nancies (twin-twin transfusion syndrome, fetal anomalies), but the most serious and frequent complication that is seen in these specific pregnancies is fetal death due to umbilical cord entanglement. As a result of this very high mortality rate, management of these pregnancies engenders much controversy. Because of the rarity of monoamniotic twin pregnancies, accurate contemporary

Reprints not available from the authors.

**Table I** Patient demographics

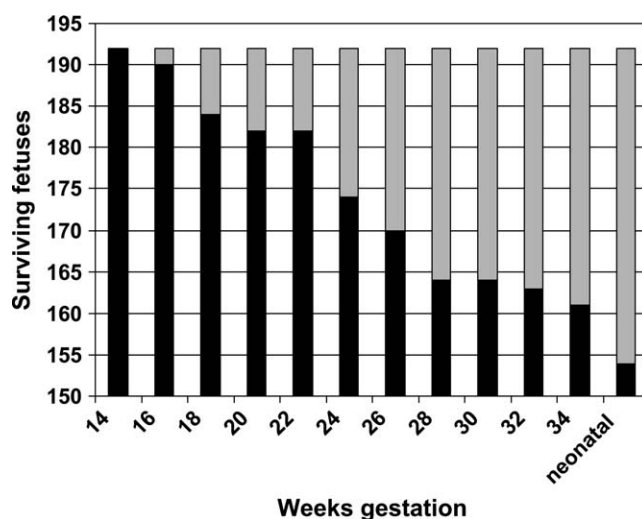
Variable (n = 96)	Mean
Maternal age (y)	29
Gravidity (n)	2
Parity (n)	1
Patients who underwent artificial reproductive technology	5 (5.2%)
Estimated gestational age at identification (wk)	17.4
Estimated gestational age at hospitalization (wk)	27.3
Fetal gender: male/female (n)	46/134
Patients who underwent fetal lung maturity amniocentesis (n)	33 (34.3%)
Estimated gestational age at amniocentesis (wk)	33
First dose of steroids (wk)	28
Total rounds of steroids (n)	2
Pregnancies with twin-twin transfusion syndrome	3 (3.1%)

survival data and optimal perinatal treatment strategies have been difficult to ascertain. Older reports commonly quote a 30% to 70% mortality rate for monoamniotic twins<sup>1,2</sup>; more recent small case series and literature reviews have suggested substantially improved outcomes,<sup>3-6</sup> although fetal deaths continue to be reported at late gestational ages.<sup>5-8</sup> The largest case series of monoamniotic twins report  $\leq 25$  patients and questions regarding optimal perinatal treatment, especially inpatient versus outpatient care, the frequency and type of antenatal fetal assessment, and ideal gestational age for elective delivery remain unresolved.

### Material and methods

In an effort to provide answers to these unresolved issues, we performed a retrospective cohort analysis of 96 monoamniotic twin pregnancies from January 1993 through December 2003.

Eleven university and private perinatal practices were enrolled in the Obstetrix/Pediatrix Research Study Group. The study received institutional review board approval or exemption at all centers. One center had a monoamniotic twin registry; the remaining centers manually searched consecutive charts of patients who were delivered of same-sexed twins for cases of monoamniotic twin gestations. Inclusion criteria were the attainment of at least 12 weeks gestation with both fetuses alive, confirmation of monoamnioticity at delivery and/or by pathologic examination of the placenta, and care by a perinatologist from within the Obstetrix/Pediatrix Research Study Group, either as primary physician or as consulting perinatologist. Exclusion criteria were pseudomonoamnioticity (the iatrogenic



**Figure 1** Fetal and neonatal survival.

creation of a single amniotic space because of an invasive procedure, such as septostomy for the treatment of twin-twin transfusion syndrome [TTTS]), acardiac twins, conjoined twins, and higher-order multiple gestations.

The primary outcome measure was intrauterine fetal death. In an effort to answer the more clinically applicable question of whether treatment could affect such outcome, we also included, as a primary outcome, fetal death after viability, which we arbitrarily defined as  $\geq 24$  weeks of gestation. Secondary outcome measures were gestational age at hospitalization, maternal days in hospital, gestational age at delivery, indication for delivery, combined birth weight of the twins, combined neonatal intensive care days, combined days on the ventilator and composite neonatal morbidity, defined as the presence of necrotizing enterocolitis, respiratory distress syndrome, bronchopulmonary dysplasia, sepsis, retinopathy of prematurity, periventricular leukomalacia, or intraventricular hemorrhage grades III or IV.

Data were abstracted from patients' charts by obstetric research nurses, and relevant outcomes were entered into a data base (Excel; Microsoft Corporation, Redmond, Wash). Indications for admission and delivery were noted by the admitting perinatologist. Patients were assigned an identifier in the database to protect anonymity. Statistical analysis was performed with the Student *t* test or Fisher's exact test, as appropriate.

### Results

Ninety-six gestations (192 fetuses) were identified. Patient characteristics are outlined in Table I. One pregnancy was not recognized as monoamniotic until delivery, with both newborn infants surviving; the remaining 95 gestations were recognized as monoamniotic antenatally. All living fetuses were delivered by cesarean delivery. Gender was recorded for 180 fetuses/

Download English Version:

<https://daneshyari.com/en/article/10032638>

Download Persian Version:

<https://daneshyari.com/article/10032638>

[Daneshyari.com](https://daneshyari.com)