

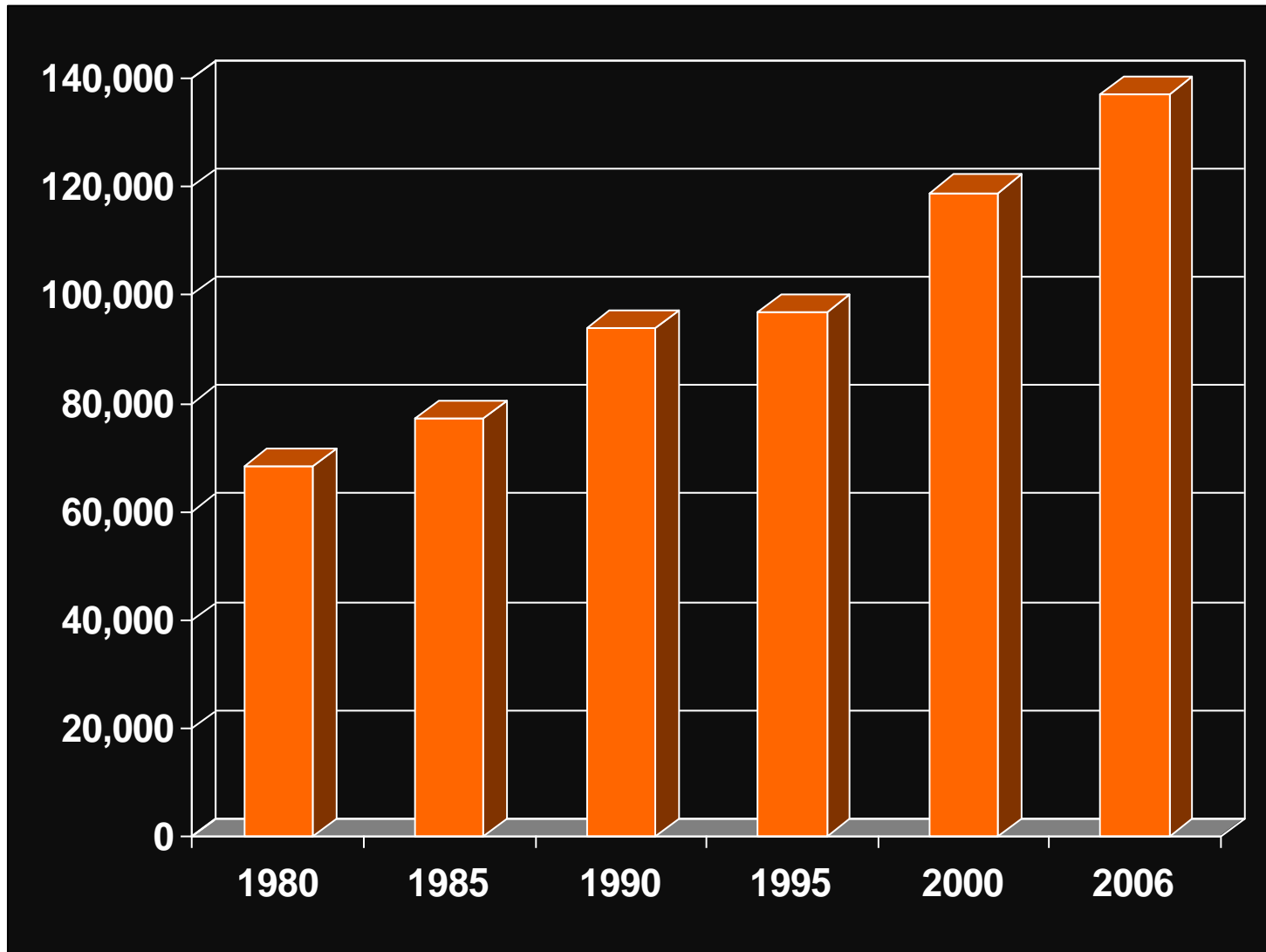
# **TWIN PREGNANCY**

## **TIMING OF DELIVERY**

**AMY SULLIVAN, MD**  
**MATERNAL FETAL MEDICINE**  
**UNIVERSITY OF UTAH**

# NUMBER OF TWIN BIRTHS IN THE UNITED STATES 1980-2006

*(UNITED STATES NATIONAL VITAL STATISTICS REPORT 2006, VOL. 57 #7)*



# INCREASED RISK FOR

■ ■ ■

Miscarriage, hyperemesis, anemia, fetal death, **prematurity**, low birth weight, HTN, preeclampsia, gestational diabetes, cesarean section, hemorrhage, congenital malformations, neonatal death, cerebral palsy, post partum depression

# **WHO TAKES CARE OF PATIENTS WITH TWINS?**

**Maternal-Fetal Medicine**

**General Obstetricians**

**Family Practice**

**Certified Nurse Midwives**

**Lay Midwives**

# Referral Patterns of Obstetricians

*(Clearly-Goldman et al. Obstet Gynecol 2007)*

	<u>No Input From MFM</u>	<u>Complete T.O.C to MFM</u>
Twins	<b>62%</b>	<b>0.6%</b>
Triplets	4.9%	43%
Quads	0.6%	83%
> Quads	0.3%	87%

# DETERMINING CHORIONICITY

## First trimester ultrasound is most accurate

- Thick dividing membrane
- “twin peak” sign
- **PPV 98%**

## Mid-trimester ultrasound

- Membrane thickness
- “twin peak” sign
- Gender
- Placentas
- **PPV 88%**

# SONOGRAPHIC DIAGNOSIS OF CHORIONICITY

## Analysis of the Effect of Maternal and Sonographic Factors on Correct Classification of Chorionicity (545 sets of twins)

<u>Factor</u>	<u>OR (95% CI)</u>	<u>P</u>
1st-trimester sonography	0.47 (0.23–0.96)	.04
Maternal age	0.97 (0.92–1.03)	.35
Maternal BMI	1.02 (0.97–1.07)	.40
Nulliparity	1.11 (0.51–2.42)	.78
Prior cesarean delivery	1.10 (0.35–3.48)	.87

**For every week increase in gestational age at the first sonographic examination, the odds of misclassification rose by 10% (OR, 1.10; 95% CI, 1.01–1.2).**

# DICHORIONIC TWINS FIRST TRIMESTER





# MONOCHORIONIC TWINS FIRST TRIMESTER



# MONOAMNIOTIC TWINS FIRST TRIMESTER



# **CHORIONICITY DETERMINES MANAGEMENT**

**Genetic counseling**

**Management of fetal anomalies**

**Evaluation for Twin Twin Transfusion**

**Antepartum surveillance**

**Timing of Delivery**

# **TIMING OF DELIVERY**

## **“UNCOMPLICATED” TWINS**

**Concordant / Normal Growth**

**Structurally Normal**

**No Obstetric Indications for Delivery**

**No Maternal Indications for Delivery**

**No Twin Twin Transfusion**

# **TIMING OF DELIVERY: “UNCOMPLICATED” DI-DI TWINS**

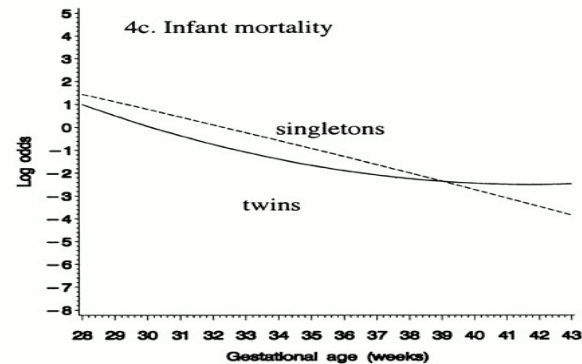
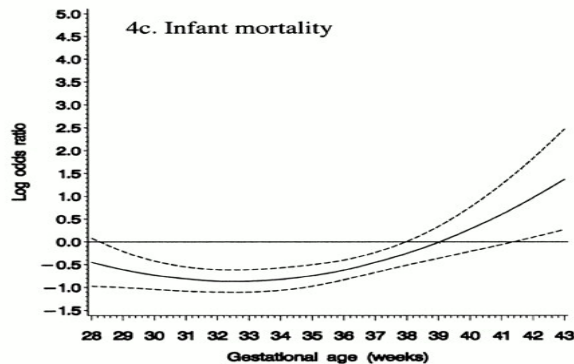
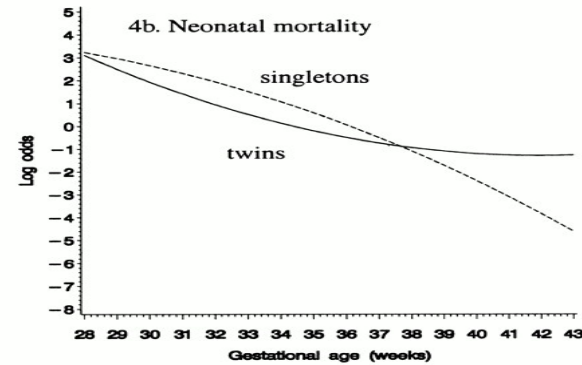
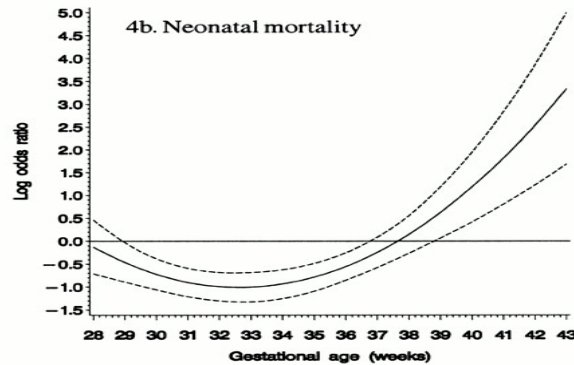
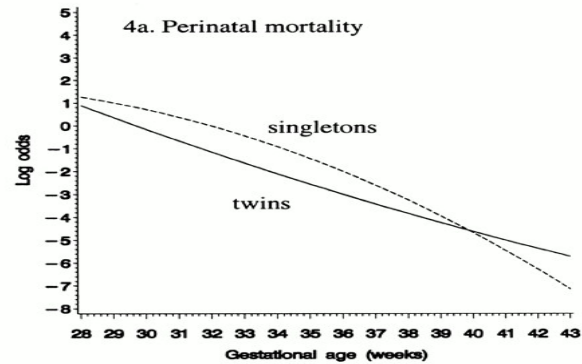
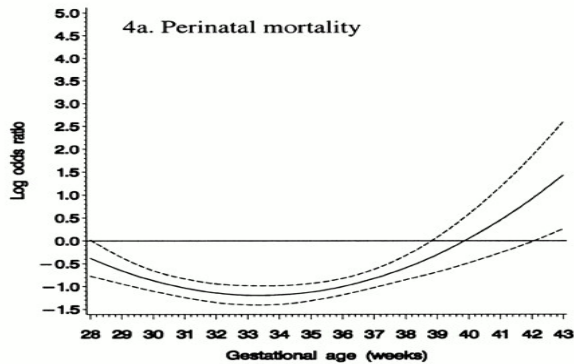
**Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD): 38 weeks**

**Society for Maternal-Fetal Medicine (SMFM): 38 weeks**

**American College of Obstetrics and Gynecology (ACOG): 38<sup>1/7</sup>- 38<sup>6/7</sup>**

**National Institute for Health and Clinical Excellence (NICE): 37 weeks**

# Mortality of twins and singletons, Sweden, 1982–1995.



# **TIMING OF DELIVERY DI-DI TWINS**

**Prospective cohort study**

**801 pairs of dichorionic twins**

**Planned preterm delivery vs term delivery**

**Outcome: Fetal mortality**

**Composite morbidity (RDS, NEC, HIE, PVL, sepsis)**

**No fetal deaths after 33 weeks gestation**

**Risk of morbidity @ 36weeks: 4%**

**Risk of morbidity @ 38 weeks: 1%**

Breathnec et al: Obstet Gynecol 2012

# MONOCHORIONICITY

Increased risk of adverse perinatal outcomes

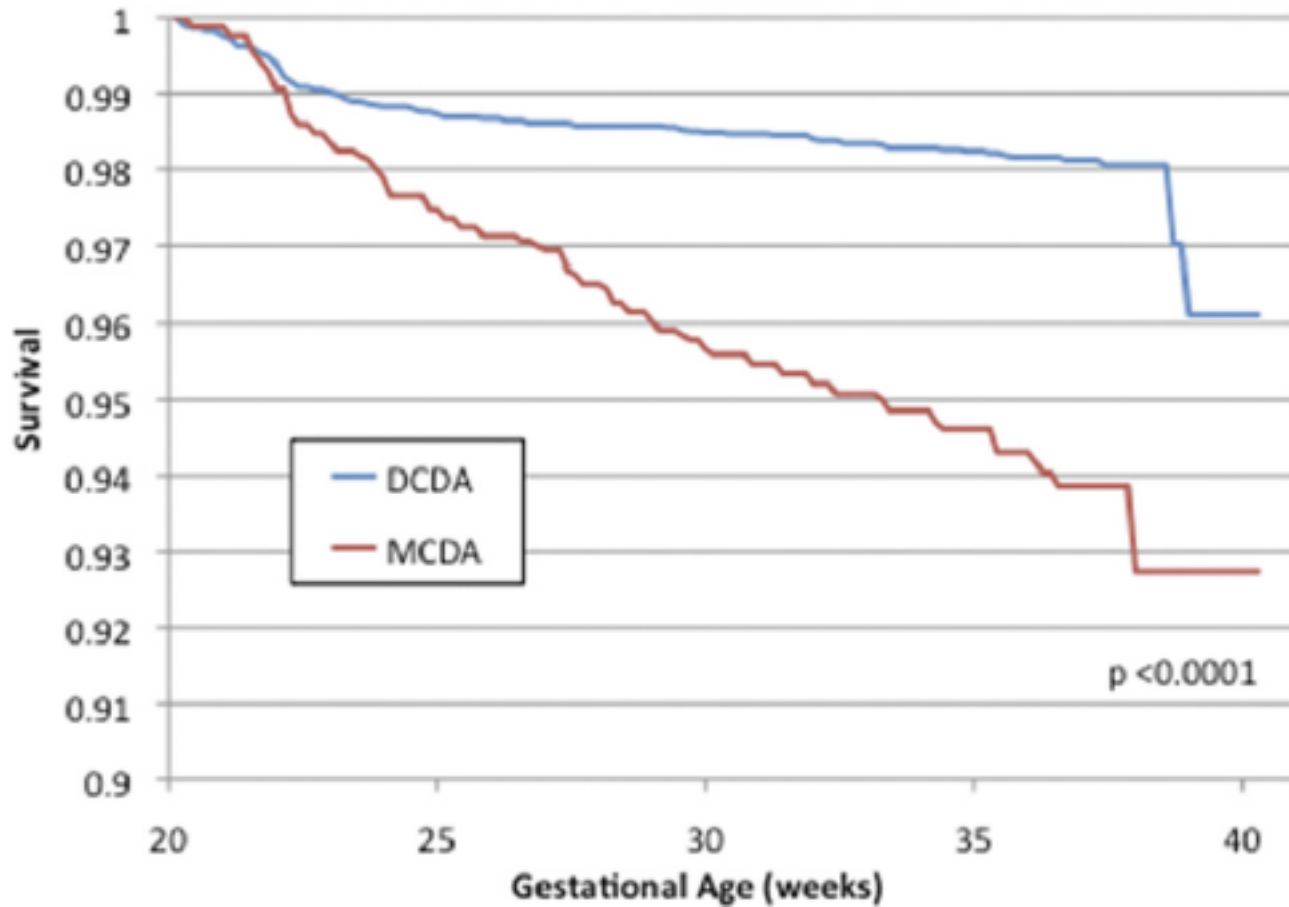
No consensus for timing of delivery (32-38)

ACOG: 34-37<sup>6/7</sup>

Iatrogenic preterm delivery to avoid potential perinatal complications is common



# SURVIVAL CURVES FOR MCDA AND DCDA TWINS



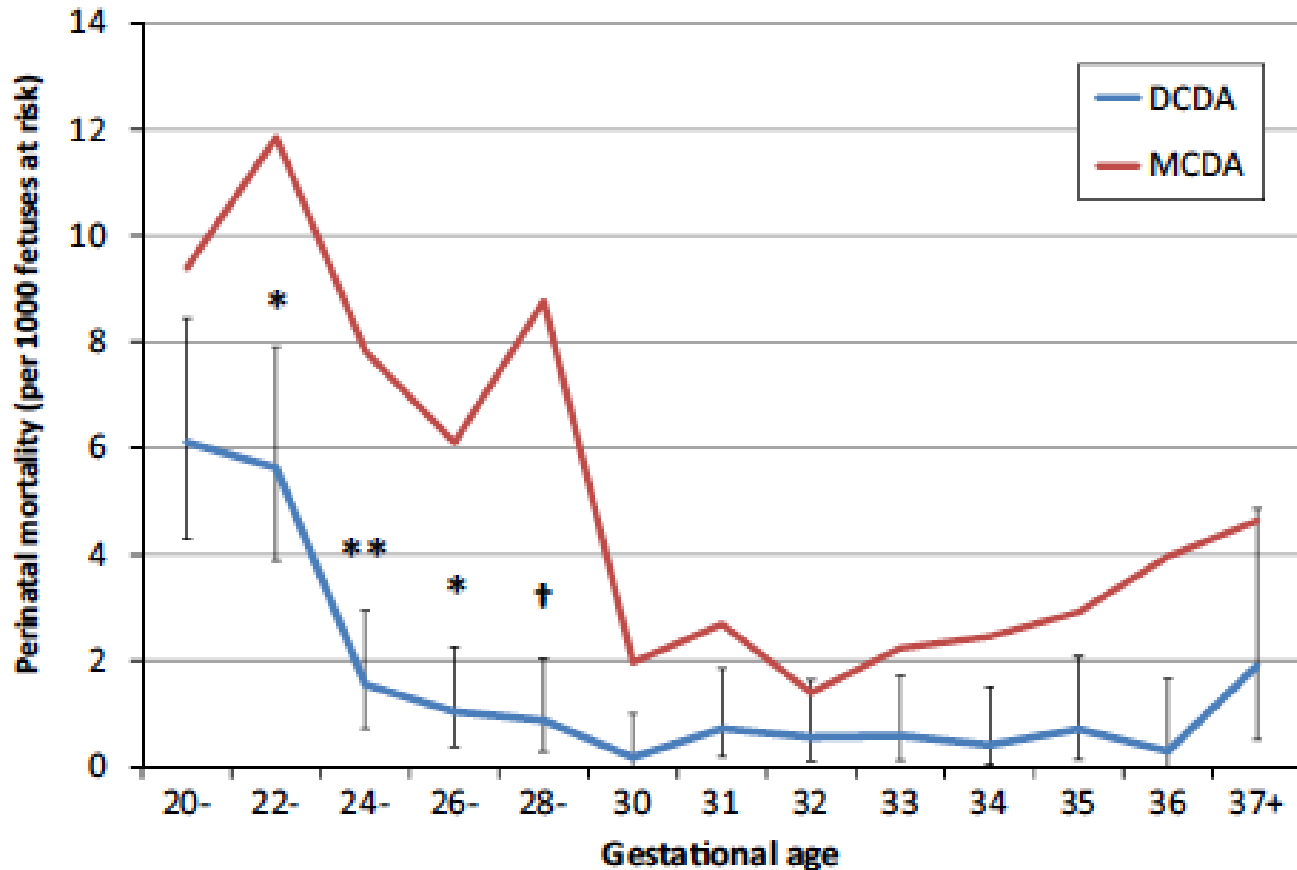
# **LATE PRETERM BIRTH**

**Increased risk serious neonatal morbidity**

**Preterm Birth: greatest risk for twins (>50%)**

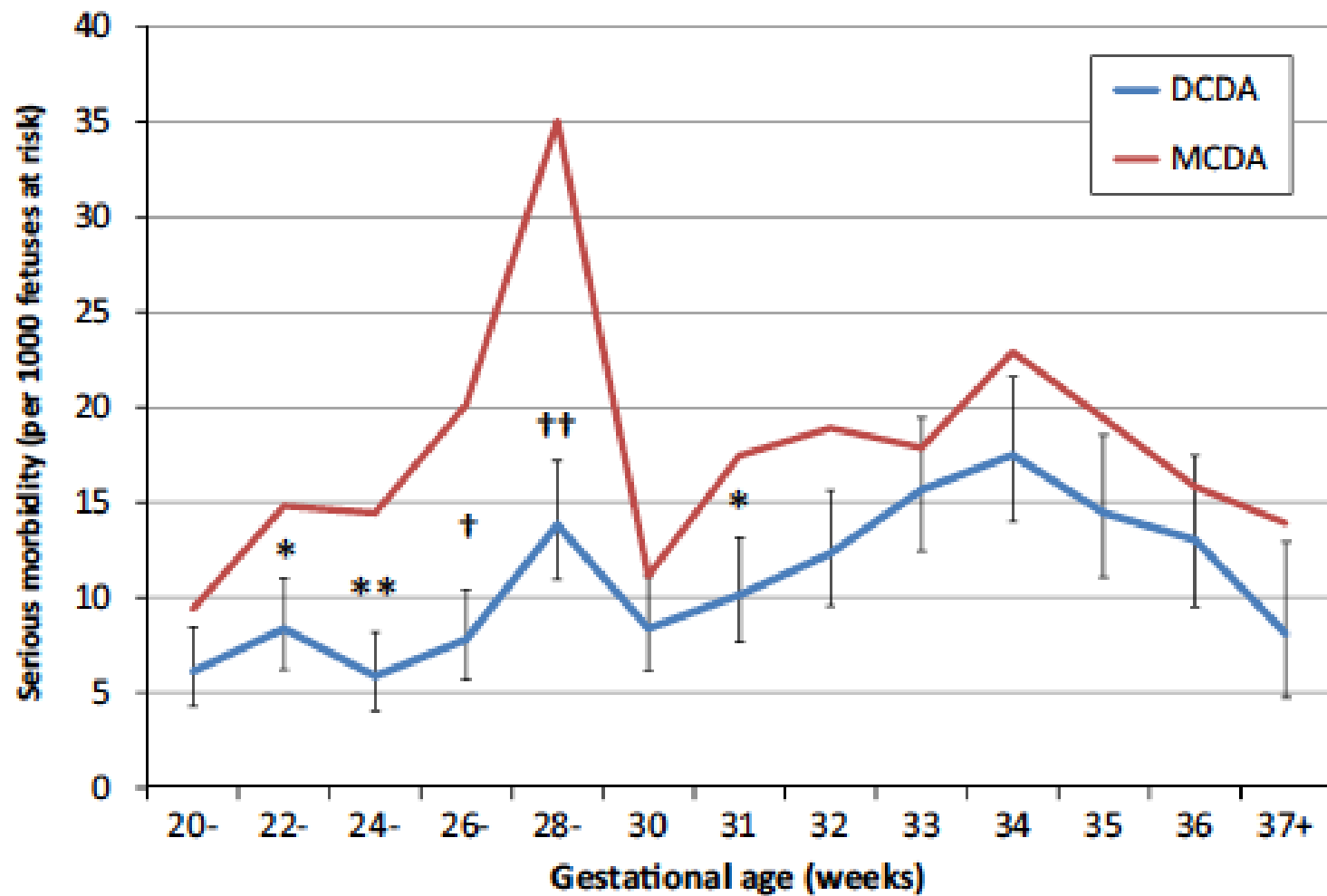
**Abnormal placental vasculature (10% of MCDA twins)**

## Gestational age-specific prospective perinatal mortality per 1000 fetuses at risk

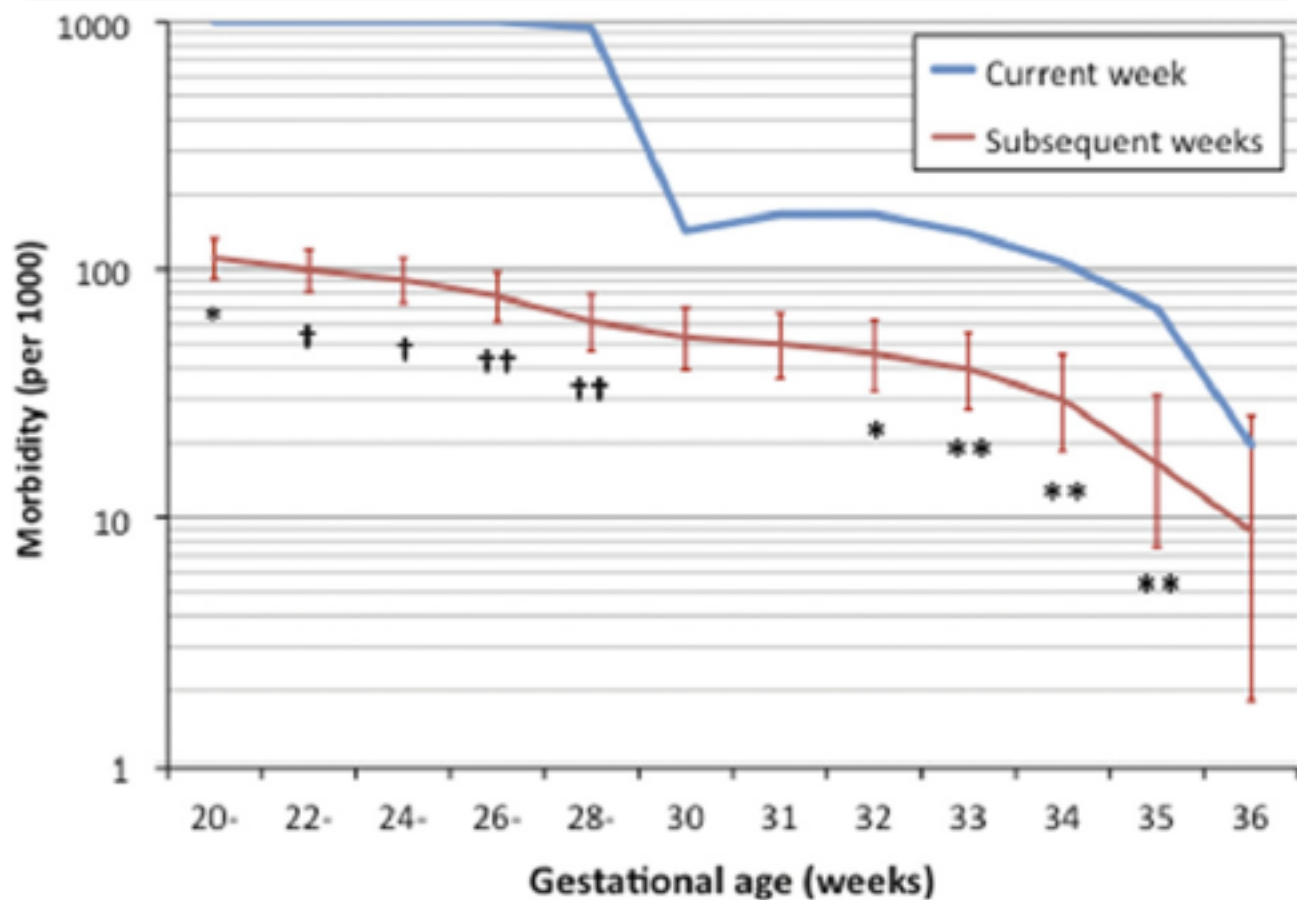


Upward trend from gestational week 32 in MCDA twins was nonsignificant ( $P = .13$  by 1-sided Cochran-Armitage trend test).

## Serious adverse perinatal events: twins with nonindicated deliveries



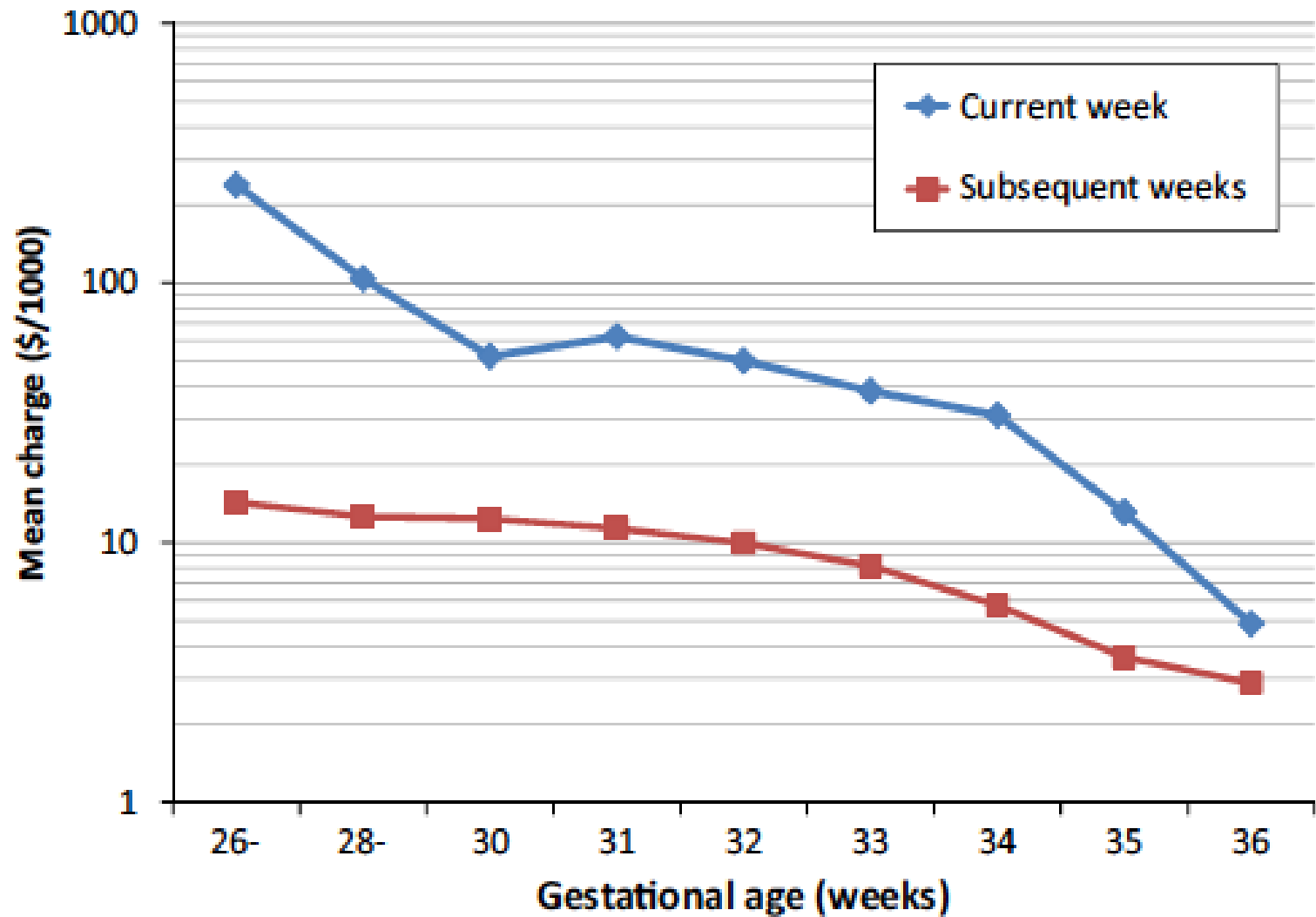
### Neonatal serious adverse events: current vs subsequent week



Neonatal serious adverse events per 1000 live births (current week) vs subsequent serious adverse events per 1000 fetuses at risk in monochorionic-diamniotic twins with nonindicated deliveries.

FIGURE 6

Mean neonatal hospital charges: current vs subsequent week



# **SUMMARY**

**Optimal timing of delivery for dichorionic twins:**

**38 weeks**

**Optimal timing of delivery for monochorionic twins:**

**37 weeks**

**Document chorionicity early**