Consider Placental Discrepancy in Discordant Twins

BY SHERRY BOSCHERT
San Francisco Bureau

San Francisco — Don't assume the presence of twin-twin transfusion syndrome if you see discordant sizes and weights in a monochorionic twin pregnancy; consider unequal placental sharing and other potential causes, Dr. Vickie A. Feldstein said.

Sometimes called "selective intrauterine growth restriction," unequal placental sharing occurs when twins who share one placenta don't divide the placental resources equally so that one twin gets less circulation and nutrition.

"Twins in utero, like twins on the outside, don't necessarily share well," she said at a meeting on antepartum and intrapartum management sponsored by the University of California, San Francisco.

Monochorionic twins typically get followed closely (at least every 2 weeks) in the last two trimesters because of the risk for twin-twin transfusion syndrome, which affects 15% of monochorionic twins and causes fetal death in up to 70% of cases if untreated.

Every ultrasound report from serial surveillance of monochorionic twins should include an estimate of percent weight discordance, said Dr. Feldstein, professor of clinical radiology and obstetrics, gynecology, and reproductive sciences at the university. To calculate percent weight discordance, take the estimated weight of the larger twin, subtract the estimated weight of the smaller twin, divide the sum by the weight of the larger twin, and multiply by 100.

If the discordance "is more than 15%, we're a little bit attentive," she said. Discordance of 20% or more is cause for concern.

A 20% discordance may stabilize, with the twins following their own growth charts and ending up healthy but slightly different sizes. "This is one of the reasons I never refer to these as identical twins," she noted.

If the discordance continues to increase, however, look for the cord insertion sites by ultrasound. With unequal placental sharing, typically the larger twin has a central cord insertion, and the smaller twin has a marginal cord insertion.

"If you do Dopplers of the cords of these twins, in general the twin with the better piece of placenta and central cord has normal umbilical artery Dopplers, and the smaller growth-restricted twin tends to have higher-resistance Dopplers from very early on," Dr. Feldstein said.

If the smaller twin starts to fall off of its growth chart, early delivery may be in order.

All monochorionic twins have connections between arteries, veins, or an artery in one twin and a vein in the other. An artery in one twin draining into a vein of the other, bringing oxygenated blood to its sibling, is definitive for twin-twin transfusion syndrome. An artery-to-artery connection is protective for twin-twin transfusion syndrome. The difference affects how the patient should be counseled.

A diagnosis of twin-twin transfusion syndrome requires not just discordant sizes/weights but also the presence of polyhydramnios in one fetal sac and oligohydramnios in the other. The variability of twin-twin transfusion syndrome cases in age of onset, severity, acuity, and degree of discordance in size, weight, and amniotic fluid volumes can make it hard to recognize.

Unequal placental sharing and twin-twin transfusion syndrome can occur separately or concurrently. "I think of monochorionic placentas like snowflakes. They're all different, and anatomy is crucial," she said.

If one twin has oligohydramnios and the other has normal amniotic fluid volume, it may be a case of unequal placental sharing, or there may be a more common problem such as a renal anomaly or rupture of membranes.

"We have a fair number of patients referred in for 'twin-twin transfusion syndrome,' and it turns out that one twin has ruptured membranes and there isn't twin-twin transfusion syndrome at all," Dr. Mary E. Norton said in a joint presentation with Dr. Feldstein. "It's important to think about the common things that can cause oligohydramnios," said Dr. Norton, director of perinatal medicine and genetics and professor of obstetrics, gynecology, and reproductive sciences at UCSF. ■

Twin-Twin Transfusion vs. Unequal Placental Sharing

	Twin-Twin Transfusion Syndrome	Unequal Placental Sharing
Amniotic fluid volumes	One twin has polyhydramnios; the other twin has oligohydramnios.	One twin has normal amniotic fluid volume; the other twin has oligohydramnios.
Estimated fetal weights	One twin is normal or large for gestational age; the other twin is small for gestational age.	One twin is normal; the other twin is small for gestational age.
Preterm labor risk	Highly elevated in both twins	Same as for other twins
Treatment	Do amniocentesis, or perform laser surgery for both twins.	Follow and deliver both twins.

Sources: Dr. Norton and Dr. Feldstein

Progesterone Stems Preterm Delivery in Short-Cervix Cases

BY MARY ANN MOON
Contributing Writer

Progesterone appears to reduce the rate of preterm delivery in asymptomatic women found to have a short cervix on transvaginal ultrasound performed midway through gestation.

However, progesterone does not reduce the rate of preterm delivery in another group of high-risk women—those carrying twins, researchers in two separate randomized clinical trials reported

Since the 2003 publication of a report that weekly injections of 17 α-hydroxyprogesterone (17P) decreased the rate of recurrent preterm birth, numerous studies have been undertaken to assess the hormone's potential benefit in different high-risk populations. Now, Dr. Eduardo B. Fonseca of King's College Hospital, London, and his associates have evaluated the effect of 200-mg vaginal capsules of micronized progesterone in women who were found at routine midtrimester ultrasound screening to have a short cervix (15 mm or less).

The researchers tested the vaginal formulation of progesterone because of its enhanced bioavailability and reduced incidence of adverse effects, compared with the oral formulation. They chose a high dose rather than the 100-mg dose used in previous studies, because they considered women with a short cervix to be at very high risk for preterm delivery.

The study subjects were 250 women treated at maternity hospitals in London, Santiago (Chile), and São Paulo (Brazil). The rate of spontaneous preterm delivery was 19% in those who had been randomly assigned to use progesterone capsules from 24 weeks' gestation until delivery, compared with 34% in those who had used placebo capsules.

This finding demonstrates that daily vaginal administration of progesterone significantly decreases the rate of preterm delivery in women with a short cervix, Dr. Fonseca and his associates said (N. Engl. J. Med. 2007;357:462-9).

Similar results were seen across most subgroups of subjects, including those who had previously delivered prematurely. However, in the small number of twin pregnancies (24) included in this study, the progesterone treatment was associated with only a nonsignificant reduction in preterm delivery.

In the second study, Dr. Dwight J. Rouse of the University of Alabama, Birmingham, and his associates assessed weekly 250-mg IM injections of 17P in 661 women pregnant with twins. The study population was drawn from a broad geographic area and was racially and ethnically diverse. Two-thirds of the women had conceived spontaneously.

The subjects were randomly assigned to receive either active injections or placebo beginning at 20 weeks' gestation and were followed at 14 sites across the United States.

The rates of preterm delivery or fetal death did not differ significantly between the group receiving 17P (42%) and those receiving placebo (37%). The mean gestational age at delivery also did not differ significantly, nor did the proportion of deliveries that occurred at 28 weeks, 32 weeks, or 36 weeks.

The rates of obstetric interventions such as tocolysis, cervical cerclage, and cesarean section also were similar between the two groups, as were the rates of adverse neonatal outcomes such as major congenital malformations. The composite outcome of serious adverse events including respiratory distress syndrome, severe intraventricular hemorrhage, periventricular leukomalacia, necrotizing enterocolitis, bronchopulmonary dysplasia, severe retinopathy of prematurity, and sepsis also was similar between the two groups.

Side effects from the injections were frequent in both groups, and three women discontinued injections because of intense local reactions.

The findings, which "are generalizable to most women in the United States who are pregnant with twins," demonstrate that 17P doesn't lower the rate of preterm birth, prolong gestation, or improve fetal or neonatal outcomes in twin pregnancies, Dr. Rouse and his associates said (N. Engl. J. Med. 2007:357:454-61).

In an editorial comment accompanying these reports, Dr. Jim G. Thornton of the University of Nottingham (England) said that much more information is needed if progesterone is to be used widely to curtail preterm delivery in women found to have a short cervix. In particular, the possible risks associated with daily vaginal administration of medication must be rigorously evaluated in women who are already susceptible to preterm delivery.

"Even if progesterone therapy is effective for some women who are at risk of preterm labor, reliable evidence is needed about long-term effects on the children before it could be widely recommended," he noted (N. Engl. J. Med. 2007;357:499-501).

"There are at least 14 ongoing trials involving women with high-risk pregnancies (both singleton and twin) that aim to recruit a total of more than 5,000 women, and I am aware of at least 2 more currently awaiting funding decisions. These should have ample power to test the effect of progesterone on important fetal outcomes as well as any differential effect in twin gestations, and long-term follow-up of the surviving children will provide important additional information," Dr. Thornton added. ■