

Two Factors Predict Surgical Success in TTTS

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SAN FRANCISCO — Gestational weight at diagnosis and proportion of selective coagulations are predictive of perioperative prognosis in severe twin-to-twin transfusion syndrome treated by fetoscopic laser surgery, Dr. Julien Stirnemann said at the annual meeting of the Society for Maternal-Fetal Medicine.

The finding could improve risk stratification and counseling for patients undergoing the fetal intervention, said Dr. Stirnemann, of CHI Poissy Saint Germain in Paris.

In recent years, fetoscopic laser coagulation of the vascular anastomoses has significantly improved survival odds of affected infants in twin-to-twin transfusion syndrome (TTTS), one of the most complex pathologies in multiple gestation, Dr. Stirnemann said.

The current study looked at factors associated with a perioperative outcome in

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323 consecutive monochorionic pregnancies complicated with severe TTTS and treated with selective laser coagulation. The selective laser surgery allows for the precise identification of vascular anastomoses vs. the nonselective technique, which targets

all vessels crossing the intertwin membrane, he said.

The primary and secondary study outcomes were survival for more than 28 days of one or both twins, respectively, without severe impairment. For purposes of the investigation, severe impairment was defined as at least one of the following: intraventricular hemorrhage stage 3 or 4, periventricular leukomalacia, bronchopulmonary dysplasia, persistent renal failure at 28 days, or surgical necrotizing enterocolitis, Dr. Stirnemann said.

The maternal and pregnancy-related variables considered in the analysis included gestational age at diagnosis, Quintero staging, estimated fetal weight, and cervical length. The surgery-related factors included the need for a transplacental approach, the number and type (selective or nonselective) of coagulations, the percentage of selectivity per procedure (ratio of selective coagulations to the total number of coagulations), and the volume of amniotic fluid drained per procedure.

The overall survival rates were 65% for at least one twin and 28% for both twins, Dr. Stirnemann reported.

In a univariate analysis of survival without impairment of at least one twin, age at diagnosis, Quintero stage 1 or 2, estimated fetal weight (donor and recipient), number of selective coagulations above four, percentage of selectivity above 60%,

and volume of drained amniotic fluid reached significance, he said. In multivariate analysis using stepwise logistic regression, "only recipients' estimated fetal weight and number of selective coagulations higher than four reach significance in the model, with odds ratios of 2.2 and 1.9, respectively," he stated.

When the same analyses were conducted to assess survival without impairment of both twins, "favorable factors in the univariate analysis were maternal age, gesta-

tional age at diagnosis, Quintero stages 1 and 2, estimated fetal weight (donors and recipients), number of coagulations higher than seven, number of selective coagulations higher than four, and percentage of selectivity above 60%," said Dr. Stirnemann. "Previous history of miscarriage and transplacental approach were significant adverse factors."

In the multivariate analysis for this outcome, "donors' estimated fetal weight and percentage of selectivity above 60% were

independent predictive factors of survival without impairment, with odds ratios of 1.95 and 1.85, respectively," said Dr. Stirnemann. Additionally, history of miscarriage was a significant adverse factor for survival, with an odds ratio of 0.3, he said.

"Awareness of these prognostic factors should become part of the discussion when counseling patients about the risks associated with fetal intervention by laser photocoagulation for twin-to-twin transfusion syndrome," he concluded. ■

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*Simopoulos, AP, Workshop on the essentiality of and recommended dietary intakes of omega-6 and omega-3 fatty acids. Ann Nutra Metab, 1999. 43 (2):127-30. ©2007 Martek Biosciences Corporation.