The efficacy of Fetoscopic Laser Surgery for Twin-Twin Transfusion Syndrome on pregnancy outcomes: a case control study

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Objective
The objective of this study was to determine the efficacy of Fetoscopic Laser Surgery (FLS) for Twin-Twin Transfusion Syndrome (TTTs) on pregnancy outcomes.

Methods
This was a prospective, case-control study of 43 pregnant women with TTTs stage II-IV according to Quintero classification from 16 to 26 weeks of gestation carried out at Hanoi Obstetrics and Gynecology Hospital, Vietnam from September 2019 to July 2021. Among them, 10 cases were done expectant management according to the wishes of the patients, 33 cases were performed FLS with coagulation the placental vascular anastomoses or ablation umbilical cord for the selective fetal reduction. The primary outcome was perinatal outcomes with survival rate of neonates and neurological complications. Secondary outcome was obstetric outcomes included miscarriage, still birth, preterm birth and time at delivery.

Results
Study population included TTTs with state II of 8 cases (80%) and 26 cases (78.8%), stage III of 1 case (10%) and 4 cases (12.1%), state IV of 1 case (10%) and 3 cases (9.1%) with mean of gestational age at detection of 21.38 weeks and 20.39 weeks in expectant management group and FLS intervention group, respectively. Only one live birth (10%) with cerebral palsy was remarked in expectant management group. In contrast, the survival rate of at least one neonates reached 84.85%, no short-term neurological complications were reported upon follow-up to six months after birth in FLS intervention group. The rate of miscarriage, still birth, preterm birth were 20.00%, 60.00%, 20.00% and 3.03%, 9.09%, 69.70% with time at delivery of 22.06 ± 3.75 weeks and 32.63 ± 5.69 weeks in expectant management group and FLS intervention group, respectively.

Conclusion
Our data suggest that FLS was effective for Twin-Twin Transfusion Syndrome on pregnancy outcomes with high survival rates of neonates, no neurological complications in shortterm outcomes by decreasing obstetric complications as miscarriage, still birth, preterm birth.