Intraoperative hypotension is the most common complication from epidural anesthesia. Many studies in parturient undergoing cesarean section under epidural anesthesia demonstrated unfavourable maternal and fetal outcomes. Maternal hypotension diminishes utero-placental blood flow and results in neonatal hypoxia and acidosis.

Epidural anesthesia is the most common anesthetic method for Selective Fetoscopic Photocoagulation (SFLP), a standard treatment for severe Twin-to-Twin Transfusion Syndrome (TTTS).

In TTTS, through communicating vessels between the twins, the donor twin develops anemia and growth retardation while the recipient twin develops fluid overload, hypertensive cardiomyopathy, and heart failure.

Nifedipine, an antihypertensive agent, is commonly given to the patients before and after the SFLP for tocolytic purpose. Recent study has demonstrated that nifedipine improves recipient twin survival rate after SFLP.

The effect of intrapartum hypotension on fetal survival outcome after SFLP is unknown.

The fetuses underwent SFLP are often very sick. We hypothesize that abrupt decrease in placental blood flow from maternal hypotension might adversely affect fetal survival rate after fetoscopic surgery.

The aim of this study is to determine the acute fetal survival rate after Selective Fetoscopic Photocoagulation (SFLP) in nifedipine exposed patients with and without intraoperative maternal hypotension.

We retrieved data from a cohort of 404 pregnant patients undergoing SFLP with epidural anesthesia for twin-twin transfusion syndrome, between April 2004 and July 2010 at the Fetal Care Center of Cincinnati.

We analyzed a subset of patients who received preoperative Nifedipine and received epidural anesthesia to minimize confounders and bias. Acute fetal survival rate is determined by ultrasound of fetal echocardiogram performed on days 3–5 after SFLP.

Intraoperative hypotension occurred in almost all of the patients; 199 out of 205 patients (97%) received vasopressor for maintain maternal blood pressure. Despite vasopressor use, significant intraoperative maternal hypotension still occurred in 113 of 205 patients (55.1%). There were no statistically significant differences in our cohort (Table 2).

Intraoperative maternal hypotension during Fetoscopic surgery is unknown. Since these fetuses are often very sick, we hypothesized that abrupt decrease in placental blood flow from maternal hypotension might adversely affect fetus and survival rate following fetoscopic procedure.

Results: We observed a higher maternal hypotensive events in all patients.

There were no statistically significant differences in maternal and fetal outcomes. Maternal hypotension during Fetoscopic surgery performed under epidural anesthesia is common. However, intraoperative maternal hypotension had no effect on fetal survival rates of the twins probably because of its transient nature and aggressive treatment with vasopressors.

Conclusions: Intraoperative maternal hypotension during Fetoscopic surgery for TTTS performed under epidural anesthesia is common. However, intraoperative maternal hypotension had no effect on fetal survival rates of the twins probably because of its transient nature and aggressive treatment with vasopressors.