



## Prognostic value of intraamniotic interleukin-6 and cervical length in monochorionic twins after fetal surgery

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### Objective

High concentration of intraamniotic interleukin-6 (IL-6) is associated with intraamniotic inflammation. Short cervical length is a risk predictor of premature rupture of membranes. Both parameters are associated with adverse perinatal outcomes. The aim of our study is to select patients at higher risk of severe prematurity after fetal surgery.

### Methods

A prospective cohort study was done in the Center of Fetal Medicine between 2015-17. We included 50 patients with monochorionic twins treated for TTTS (36 cases) and sFGR (14 cases). We performed laser coagulation of anastomoses in 34 cases, bipolar occlusion in 16 cases. In all patients we measured cervical length with transvaginal ultrasound prior to surgery. Amniotic fluid sample was taken at the beginning of surgery to determine concentration of IL-6 (Roche Diagnostics). Surgery-to-delivery interval, extreme prematurity (<28 weeks), perinatal outcomes and placental studies were recorded. Data was analyzed with IBM SPSS statistics.

### Results

Mean gestational age at surgery was 21.4 weeks (min 16, max 26), mean cervical length prior to surgery 31.2mm (min 0; max 44), mean IL-6 was 900 ng/l (min 23; max 5000). In this group double survivor rate after laser was 58%, at least one survivor in 83%. Mean gestational age at delivery was 31 (after laser) and 33 (after bipolar occlusion). There were no statistical differences between laser and bipolar group. Short cervix was associated with abortion / delivery within 14 days ( $p=0.033$ ), but not with extreme prematurity ( $p=0.06$ ). High concentrations of IL-6 were strongly associated with extreme prematurity ( $p=0.005$ ), but not as much with delivery within 14 days ( $p=0.045$ ). We discovered only 3 cases of histological chorioamnionitis.

### Conclusion

High levels of intraamniotic IL-6 are associated with extreme prematurity after fetal surgery in monochorionic twins. Our study suggests that these inflammatory changes are mostly aseptic. Short cervical length prior to surgery is associated to premature rupture of membranes shortly after surgery.