Introduction The aims of this study were to evaluate the time intervals of flow velocity waveforms (FVW) of ductus venosus (DV), as well as DV-PI in correlation with pH of umbilical artery (UA-pH) at birth in fetal growth restriction (FGR) complicated with placental insufficiency.

Methods FGR is defined as estimated fetal weight <−2.0 SD. Fetuses with congenital anomalies and multiple pregnancies were excluded. The data of DV-S/D were transformed as z-scores from the reference ranges which already establish by our previous reports. DV-S/D and DV-PI were correlated with UA-pH at birth.

Results 34 fetuses were included in this study and their characteristics are; gestational age at delivery, 29.8 weeks (range: 25.0 – 35.5w); birth weight, 848g (range: 419 – 1685g); UA-pH, 7.25 (range: 6.99 – 7.33)

Conclusion We showed that DV-S/D is a useful parameter in the management of FGR fetuses regarding the prediction of fetal acidemia. We believe that time interval analysis of DV-FVW might be a valuable parameter in the antenatal surveillance of fetuses at high risks. Longitudinal studies are needed to monitor when the alteration of DV-S/D becomes apparent in the time course of fetal deterioration in the FGR cases with placental insufficiency.