

# Clinical Significance of Preterm Fetal Cardiotocography in Severe Fetal Acidemia due to Chorioamnionitis

Ryota ARAKI<sup>1)</sup>, Daichi URUSHIYAMA<sup>1)</sup>, Chihiro KIYOSHIMA<sup>1)</sup>,  
Fusanori YOTSUMOTO<sup>1)</sup>, Masaharu MURATA<sup>1)</sup>, Satoko TANAKA<sup>2)</sup>,  
Makoto NOMIYAMA<sup>2)</sup>, Mizuki FUJITA<sup>3)</sup>, Takashi MIYAKAWA<sup>3)</sup>,  
Shingo MIYAMOTO<sup>1)</sup>

<sup>1)</sup> *Department of Obstetrics and Gynecology, Faculty of Medicine, Fukuoka University*

<sup>2)</sup> *Department of Obstetrics and Gynecology, Saga Hosipital*

<sup>3)</sup> *Department of Gynecology and Obstetrics, Fukuoka Tokushukai Hospital*

## **Abstract**

**Aim:** At present, premature birth with chorioamnionitis is recognized as a social problem to be solved even in high-income countries. It is difficult to evaluate the preterm fetal condition using cardiotocography tracings. In this study, we compared the cardiotocographies in preterm fetus with or without chorioamnionitis.

**Methods:** The 22 subjects were recruited at three institutes between September 2010 and August 2016. To review the clinical importance of fetal cardiotocography tracings in preterm fetus with severe acidemia, we examined the baselines, variabilities, and decelerations of fetal heart rate (FHR) in preterm fetus with and without chorioamnionitis, with a pH <7.2 in the umbilical artery.

**Results:** In pregnant women with chorioamnionitis, some of the observed clinical features involved in uterine infection, e.g. heart rate, white blood cell count and CRP value, were significantly different compared with those in pregnant women without chorioamnionitis. In fetuses with chorioamnionitis, Apgar score at 5 minutes after birth, frequency of abnormal variabilities of FHR, rapid restoration of FHR from the bottom of deceleration and short duration of deceleration were also found. Distinctly different patterns of cardiotocography tracings were observed between the fetuses with and without chorioamnionitis.

**Conclusions:** The rapid restoration of FHR from the bottom of deceleration might be the indicator of the preterm fetal acidemia with chorioamnionitis, even if variability of FHR were within normal.

**Key words:** Fetal Acidemia, Cardiotocography, Fetal Heart Rate, Preterm, Chorioamnionitis