



## Antenatal ultrasound screening of the umbilical cord abnormalities for predicting a non-reassuring fetal status during labor

Hasegawa J, Takita H, Tokunaka M

St. Marianna University School of Medicine, Kawasaki, Japan

### Objective

To clarify the effectiveness of antenatal ultrasound screening of umbilical cord abnormalities for predicting a non-reassuring fetal status during labor (NRFS).

### Methods

A prospective cohort study was conducted between 2012 and 2013. Ultrasound evaluation of umbilical cord and placental abnormalities and fetal biometry was performed among pregnant women until 36 weeks' gestation. Patients who underwent ultrasound screening were divided into three risk level groups according to their abnormalities. After delivery, NRFS and emergency Cesarean section (eCS) rate were compared between the risk groups.

### Results

A total of 790 subjects were analyzed. Elective Cesarean section was performed on 111 cases. Consequently, 34 cases in the high-risk group, 45 cases in the middle-risk group and 600 cases in the low-risk group were analyzed. NRFS was diagnosed in 17.6%\* of the patients in the high-risk group, 11.1%\* of the patients in the middle-risk group and 5.6% of the patient's in the low-risk group. eCS was performed on 8.8%\* of the high-risk subjects, 4.4%\* of the middle-risk subjects and 0.8% of the low-risk subjects (\* $p < 0.05$  compared to the low-risk group).

### Conclusion

The use of antenatal ultrasound screening of umbilical cord abnormalities and risk classification effectively identifies cases of NRFS during delivery.