

学位論文の要旨

三 重 大 学

所 属	三重大学大学院医学系研究科 甲 生命医科学専攻 臨床医学系講座 産科婦人科学分野	氏 名	前田 佳紀 (よしのり まえだ)
主論文の題名			
Transient effects of forebrain ischemia on fetal heart rate variability in fetal sheep			
主論文の要旨			
<p>Fetal heart rate variability (FHRV) is a key index of antenatal and intrapartum fetal well-being. FHRV is well established to be mediated by both arms of the autonomic nervous system, but it remains unknown whether higher centers in the forebrain contribute to FHRV. 16 chronically instrumented near-term fetal sheep were subjected to either forebrain ischemia induced by bilateral carotid occlusion or sham-ischemia for 30 min. Time, frequency and non-linear measures of FHRV were assessed during and for seven days after ischemia. During the first 5 min of ischemia, multiple time and frequency domain measures were increased (all $p < 0.05$) before returning back to sham levels. For the first 3 h after ischemia there was moderate suppression of two measures of FHRV in very-low frequency power and the standard deviation of RR-intervals ($p < 0.05$), and increase of Sample Entropy ($p < 0.05$). Thereafter, all measures of FHRV returned to control levels. In conclusion, profound forebrain ischemia sufficient to lead to severe neural injury had only transient effect on multiple measures of FHRV. These findings suggest that the forebrain makes a limited contribution to FHRV. FHRV therefore primarily originates in the hindbrain and is unlikely to provide meaningful information on forebrain neurodevelopment or metabolism.</p>			