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169 Middle cerebral artery blood flow velocity waveforms as a strong predictor of fetal distress in intrauterine growth retardation.
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We studied the relationship between middle cerebral artery(MCA) blood flow velocity waveforms(FVWs) and umbilical artery(UA) FVWs in 127 normal and 38 intrauterine growth retarded fetuses(IUGR) in the third trimester of gestation.
There was a significant positive correlation between the resistance index (RI) of MCA FVWs (MCA-RI) and the RI of UA FVWs (UA-RI) in normal fetuses. IUGR that developed fetal distress had lower MCA-RI than normal fetuses and IUGR that had good outcomes. The diagnostic accuracy of fetal distress was significantly improved by the combined assessment of the MCA FVWs and UA FVWs.(MCA and UA : 89.5% vs. UA alone : 60.5%)

170 Analysis of fetal blood flow waveforms in IUGR utilizing pulsed Doppler method during fetal distress. O. Yoshimura, J. Ishimatsu, M. Hotta, A. Manabe, M. Tetsuou, T. Hamada, M. Yakushiji, Dept. Obst. and Gynec., Kurume Univ. Sch. Med., Fukuoka.

To make the functional assessment of fetal circulation, velocity waveforms of fetal vessels were recorded in 15 asymmetrical IUGR(A-IUGR). The resistance index(RI) from umbilical artery(UA), middle cerebral artery(MCA) and descending aorta(DA) and maximum and mean velocity(V-max,V-mean) from ascending aorta(AO) and pulmonary artery(PA) were calculated. When UARI was in normal range, MCARI, DARI,V-max and V-mean of AO and PA were in normal range in 6 A-IUGR fetuses with reactive NST. When UARI was elevated, concomitant elevation of DARI was noted, while MCARI,V-max and V-mean of AO and PA remained to be in normal range. Four A-IUGR fetuses with non-reactive NST revealed elevated UARI and DARI,declined MCARI, normal values of V-max and V-mean of AO and PA. Five A-IUGR cases with loss of variability on CTG exhibited elevated UARI and DARI,declined MCARI,V-max and V-mean of AO and PA. The findings indicate that during the development of fetal distress in A-IUGR, elevation of UARI appears to occur initially,which is followed by decline of MCARI,V-max and V-mean of AO and PA.

171 Safety zone in mother and fetus with severe pregnancy induced hypertension under the treatment with antihypertensive drugs. T. Kitanaka, A. Hidaka, S. Tomoda, T. Sugawa, Dept. Obst. and Gynec., Osaka City Univ. Sch. Med. Osaka.

It is important to lower blood pressure (BP) optimally in the management of severe pregnancy induced hypertension (SPIH). We compared the effects of lowering BP by antihypertensive drugs on maternal-fetal hemodynamics between the patients with SPIH and normotensive patients. We measured the vascular resistance index (RI) of fetal descending aorta, umbilical artery and maternal uterine artery by pulsed doppler and maternal cardiac output (CO) by impedance cardiography. Drugs were administered intravenously in patients with SPIH and spinal anesthesia was performed in normotensive patients for cesarean section. In cases of normotensive patients when the decreasing rate of mean BP (MBP) was less than 30%, vascular RI decreased in those vessels and CO increased. When the decreasing rate of MBP was more than 30%, vascular RI increased and CO decreased. However, in case of SPIH when the decreasing rate of MBP was less than 20%, RI decreased and CO increased. When the decreasing rate of MBP was more than 20%, RI increased and CO decreased. Therefore, the safety zone in patients with SPIH is less than normotensive patients and the decreasing rate of MBP by antihypertensive drugs should be within 20% in patients with SPIH.

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