IS-MW-5-1  The improved management of obstetric hemorrhage can reduce the maternal mortality rate: A report from the Maternal Death Exploratory Committee in Japan

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[Objective] To clarify the problems related to maternal deaths in Japan, including the diseases themselves, causes, treatments, and hospitals or regional systems. [Methods] Women who died during pregnancy or within a year after delivery at hospitals in Japan. [Results] Maternal deaths (n=213) were caused by: postpartum hemorrhage (PPH: 23%), brain disease (16%), amniotic fluid embolism (12%), cardiovascular disease (8%) and pulmonary disease (8%). It was difficult to prevent maternal deaths due to amniotic fluid embolism and brain disease. In contrast, half of the deaths due to PPH might have possibility to prevent, because the peak duration between the initial symptoms and initial cardiopulmonary arrest was 1-3 hours, but there were no cases of massive PPH in which cardiopulmonary arrest occurred within 30 minutes. 58% (98 cases) of maternal deaths still occur after maternal transport between medical facilities. In particular, 15 cases were transferred from a facility in which only one or two obstetricians were on duty or from a midwifery home. [Conclusion] The committee considered that the deaths of approximately half of the pregnant women died due to PPH in Japan were potentially preventable.

IS-MW-5-2  Prediction of adherent placenta with placenta previa using a novel scoring system

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[Objective] Adherent placenta (AP) is a life-threatening condition, and is often complicated by placenta previa (PP). We have devised an original scoring system for predicting AP complicated by PP (APPP), and conducted a prospective cohort study to evaluate the diagnostic accuracy of our scoring system (APPP score). [Methods] APPP score is composed of the following two components: 1) history of previous cesarean section, dilation and curettage, or other surgeries damaging endometrium; and 2) imaging findings of ultrasonography and MRI. Each item is graded either 0, 1, 2, or 4 points, and then added up to yield a number between 0 and 24. If patients had score 8 or more, we suspected that they had APPP. The diagnostic accuracy of APPP score was estimated. This study was approved by the institutional ethics boards. The informed consent was obtained from all patients. [Results] The study included 104 pregnant women with PP, and 17 had APPP score 8 or more. Fourteen of the 17 actually had APPP. However, two women with APPP were overlooked by APPP score. APPP score yielded 88% sensitivity, 96% specificity, 82% positive predictive value, and 98% negative predictive value. [Conclusion] This prospective cohort study demonstrated that a novel scoring system might be useful for identifying patients at a high risk for APPP.

IS-MW-5-3  Brain damage-preventive effects of progesterone in a cerebral palsy rat model

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[Objective] Neonatal cerebral palsy (CP) is caused by a series of brain damage repair processes after perinatal hypoxia/ischemia–reperfusion. Progesterone (P) promotes recovery from damage caused by brain trauma in adults. In this study, we used a CP rat model to investigate its brain damage–preventive effects. [Methods] Female rats on pregnancy day 18 were laparotomized, and blood flow in the uterine artery was cut off for 45 min. P (0.10 mg/d) or medroxyprogesterone acetate (MPA, 0.12 mg/d) was continuously administered subcutaneously to the offspring for 9 days from day 1 after birth. The rotarod test was used to assess motor coordination ability. Survival time (T) was defined as time during which they were able to stay on the rotarod and analyzed by using the Kaplan–Meier method. Furthermore, brain tissue was observed on microscopy. [Results] The hypoxia/ischemia treatment significantly shortened T. In the P group, T was restored to sham surgery level (log rank test, p<0.001), but not in the MPA group. The neuron count in the cortical and hippocampal CA1 region was decreased, as well as the oligodendrocyte count in the corpus callosum. These changes manifested at 5-50 days of age. P administration decreased these histological changes. [Conclusion] P administration after birth restored motor ability in the CP rats, showing that it may prevent brain damage with CP.