ISP-22-8  The study of murine short term variability at each fetal stage

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[Objective] Baseline variability (short term variability) is an important index of fetal condition under hypoxia or brain hemorrhage. It appears to be regulated by autonomic nervous system. As autonomic nervous system matures, STV increases in fetal sheep. This maturation is based on the change of gene expressions. However, it has not been measured numeric data at each growth stage in mouse: we cannot study the relation between STV and gene expressions during each developmental stage. [Methods] C57BL/6 fetal mice (term 19 days) were used in this study under approval from our University Research Ethics Board. Because their autonomic nervous system develops at the latter half of pregnancy, the STVs with electrocardiogram were measured at the beginning of the latter half period (15.5 days of gestation n=3) and before the delivery (18.5 days of gestation n=3). [Results] For each mouse, we recorded over 1,000 R waves and calculated the RR intervals. The STVs at 15.5 days of gestation were 3.33ms, 2.30ms and 2.32ms. On the other hand, the STVs at 18.8 days of gestation were 4.70ms, 6.05ms and 6.57ms, which were longer than those at 15.5 days of gestation. [Conclusion] STV increased as gestational day proceeds in fetal mice. We would like to make reference value of STV at each pregnant stage for next steps.

ISP-23-1  Vaginal inflammatory preconditioning triggers fetal brain inflammation which contributes to block acute fetal death in response to amniotic LPS

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[Objective] Amniotic infection often has a pathologic maternal source, such as chorioamnionitis (CAM) which is most commonly an ascending disease derived from ongoing bacterial vaginosis (BV). However, there is no evidence to prove whether it is necessary to use different clinical treatments for the CAM patient who with or without subclinical BV respectively. [Methods] An ascending mouse model using two steps of administration LPS into the vagina and the amniotic fluid was developed. On gestation day 18, 460 fetuses derived from 70 pregnant mice were selected from 171 pregnant mice for the highest quality of sample population for analysis. [Results] Vaginal LPS precondition induces a faster inflammatory reaction, different area of brain to active in response to amniotic LPS resulting protect fetus from fetal brain damage. With vaginal LPS precondition, higher survival ratio of fetuses (100% in VAP Vs 59% in AF) in response to amniotic LPS at the endpoint 3 hours (p=0.0002, Hazard Ratio: 15.12 (Vs. AF), 95% CI of ratio: 3.87 to 63.76). Supporting data is from FECG data of AF 16s with a continuously extension of the R-R interval by 1s folds. [Conclusion] We suggested that anti-inflammation cure should be considered carefully about the pathologic period during treatment ascending CAM patient in obstetrics.

ISP-23-2  The effect of maternal screening for HBV and perinatal HBV prevention program

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[Objective] The aim of this study is to assess the effect of maternal screening for HBV and perinatal HBV prevention program. [Methods] With approvals from institutional ethics boards, this study was performed prospectively. 3102 pregnant women delivered at our hospital between Jul. 1, 2008 and Jun.30, 2015 and their neonates were participated in this study. HBs antigen (HBsAg) was measured during the first trimester as a maternal screening. HBe antigen (HBeAb) was measured for the HBsAg positive patients. All neonates delivered from HBsAg positive women were given HBIg and HB vaccine based on the Japanese HBV prevention program after birth. [Results] Of 3102 pregnant women, 33 were positive for HBs antigen. 10 of the 33 were positive for HBe antigen. Two exacerbation cases were observed among the patient with positive for HBeAg. HBsAg and HBeAg, AST, ALT and HBV-DNA titers increased in both exacerbation cases. HBV prevention program was accomplished for all neonates, and consequently, vertical infection was not observed. [Conclusion] We find that perinatal HBV prevention program is so effective. HBsAg, HBeAg, AST, ALT and HBV-DNA titers seem useful for evaluating patient's condition, but it seems difficult to predict exacerbation by these factors. Careful follow up is necessary to exclude exacerbation, for the women with HBeAg positive result.