ISP-19-3 Appropriate antibiotic therapy for preterm labor with or without intra-amniotic microbes evaluated by rapid and false positive-negative PCR system could prolong gestational period

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[Objective] To examine the efficacy of antibiotics for preterm labor with intact membranes by detecting the intra-amniotic microbes using rapid and false positive-negative PCR system. [Methods] 104 preterm labor cases (<32 weeks) were recruited. Until May 2012, the antibiotics were empirically prescribed based on the clinical severity. The result of intra-amniotic microbes in stock samples was evaluated later by our PCR system, and we examined the effect of antibiotics. The appropriate antibiotic therapy was defined as beta-lactam antibiotics therapy against the bacteria, macrolide antibiotics therapy against Mycoplasma or Ureaplasma or no therapy against no microbes. [Results] In the case of positive microbes (n=37) in amniotic fluid, the appropriate antibiotic therapy was significantly associated with prolonged gestational days (45 vs. 12 days ; $p<0.0001$) without adverse neonatal complication, while in negative (n=67), the antibiotics made the gestational period significantly shorter (35 vs. 57 days ; $p<0.0001$). The prolonged gestational days in appropriate antibiotic therapy group were significantly longer than that in not appropriate antibiotic therapy group (56 vs. 27 days, $p<0.0001$). [Conclusion] We should not use antibiotics in infection-free preterm labor cases. Antibiotic therapy to microbes positive cases could prolong the gestational period without neonatal complications.

ISP-19-4 The effects for administration of preterm labor with protocol alteration in tocolytic agents

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[Objective] To evaluate the effect of long-term (LT) use of tocolytic agents (TA) to prevent the preterm delivery (PD) and to improve the perinatal outcomes. [Methods] A historical cohort study was performed. We revised the protocol for preterm labor (PPL) from (LT) to short-term tocolysis. The revised PPL was as follows : 1. Up to 48 hours or their uterine contractions (UC) controlled, TA were administered to pregnant women who had both regular UC and internal cervical os opened>1cm. 2. When TA started, corticosteroid would administer to reduce neonatal complications. Perinatal outcomes and given dose of TA before and after PPL revision were compared. [Results] 1444 deliveries after protocol PPL revision were compared to 1548 deliveries before that. Frequencies and total ampules (A) of ritodrine were 4.1% and 4654 A in previous PPL and 1.0% and 514 A in new one. Those of magnesium sulfate were 1.0% and 1574 vials (V) in previous protocol PPL and 0.4% and 193 V in new one ($p<0.01$). The PD before 36 and 28 weeks' gestation were 11.8% and 1.3% in previous PPL, and 10.6% and 1.2% in new one (ns). [Conclusion] There was no significant change in the PD before and after the protocol PPL revision. Because decrease in tocolytic agents TA didn't lead to the increase of PD. LT tocolysis wasn't effective to prevent the PD, and LT tocolysis for preterm labor should be reconsidered.

ISP-19-5 Effect of progesterone on human cervical fibroblast—from basic research to clinical significance

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[Objective] Recently, vaginal progesterone (P4) supplementation has been shown to significantly reduce the risk of preterm birth. This study was undertaken to assess the effect of progesterone on uterine cervix under different levels of inflammation and/or the timing of progesterone treatment. [Methods] Human uterine cervical fibroblast cultures were established and incubated for 12 h with 2.0 μg/mL LPS (high-LPS) or 0.2 μg/ml LPS (low-LPS) in the presence or absence of 1.0 μM P4 treated simultaneously (simultaneous P4 treatment) or 1 h prior to LPS stimulation (prior P4 treatment). Cellular mRNA was extracted and subjected to real-time RT-PCR analyses to assess the gene expression pattern of IL6, IL8, IL-1beta, PTGS, MMP1 and HAS2. [Results] The expression of IL8 and IL6 stimulated with high-LPS was not suppressed by simultaneous P4 treatment, but IL6 expression was significantly suppressed by prior P4 treatment. The expression of IL8 and IL6 stimulated with low-LPS was significantly suppressed by simultaneous and prior P4 treatment, and the suppression was more pronounced in prior P4 treatment. Other molecules showed similar expression patterns with the exception of HAS2 which was not suppressed by P4 in any condition. [Conclusion] Early or prophylactic administration of P4 is considered important to achieve effective P4 action to reduce the risk of preterm birth.