IS-124 Persistent Detection of Alfa-fetoprotein in the Vagina without Overt Preterm Premature Rupture of the Membranes: Clinical and Chemical Characterizations

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[Objective] The objectives of this study were to clinically characterize and seek risk factors for the patients with persistently detected alfa-fetoprotein (AFP) in the vagina without showing overt preterm premature rupture of the membranes (PROM). [Methods] The cohort study was undertaken using vaginal specimens collected consecutively between 21 and 40 weeks of gestation from 25 consenting women. Obstetric data from patients with persistent positive results of AFP kit tests without showing overt leakage of amniotic fluid were compared to those from controls. Cervical levels of cytokines and granulocyte elastase were measured by immunoassay, and the uterine cervix was assessed by transvaginal ultrasonography. Statistical analysis involved Fisher's exact test and Mann-Whitney U test. [Results] The incidence of overt preterm PROM was significantly higher in the patients with persistently detected AFP than in controls. Patients with persistently detected AFP had significantly higher cervical levels of interleukin-6 and significantly shorter cervical length than controls. [Conclusion] Patients with persistently detected AFP in the vagina without showing overt preterm PROM have the risk of overt preterm PROM. Increased levels of interleukin-6 in cervical specimens and short cervical length may be risk factors for the occurrence of persistent detection of AFP in the preterm.

IS-125 KL-6 and SP-A Levels in Amniotic Fluid as Markers of Fetal Lung Maturation

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[Objective] KL-6 is a glycoprotein expressed on type 2 alveolar cells. Surfactant protein A (SP-A), which concentration in amniotic fluid increase following fetal lung maturation, is one of surfactant specific proteins. Our purpose was to determine the utility of KL-6 and SP-A concentrations in amniotic fluid in predicting respiratory distress syndrome (RDS). [Methods] Ninety-eight deliveries before 37 gestational weeks (31 with RDS and 67 without RDS) entered into this study. Amniotic fluid specimens collected within 24 hours prior to the deliveries were stored with informed consents from parents. KL-6 levels in the samples were measured by an EIA kit (Eltest KL-6, Eliaf Co.). SP-A levels were measured by an EIA kit (SP-A hi-test Teljin, Kokusai Shiyaku Co.). Prenatal clinical factors and these concentrations were assessed as variables to predict RDS. [Results] Cases with RDS showed significantly lower not only SP-A levels (mean 57.5, 95% CI 38.9–85.2 ng/ml) but also KL-6 levels (mean 304.6, 95% CI 78.5–1182.4U/ml) than those without RDS (SP-A: mean 475.8, 95% CI 358.1–632.0 ng/ml, KL-6: mean 609.1, 95% CI 149.1–2488.1U/ml). Lower KL-6 levels, lower SP-A levels and shorter gestational duration were selected as independently correlating factors to RDS by logistic regression analysis. [Conclusion] KL-6 and SP-A levels were considered independently useful in predicting RDS.

IS-126 Myometrium-cDNA-Gene-Expression-Library Shows New Insights in the Ultrastructure of Myometrium

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Objective: Even though the function of the myometrium is vital for the existence of all mammals there is little knowledge about its ultrastructure. So far only the contractile filaments actin and myosin could be identified. There is no evidence for the existence of other filament systems neither by means of electron microscopy nor histochemically. Problem: Is there a method that is capable of decoding the postulated further myofibrill proteins? Methods: Special low percentage SDS gradient gel electrophoresis is capable of splitting proteins in the megadalton area in myometrial biopsies. Injections of these protein bands into rabbits to stimulate antibodies. These antibodies are needed to search a uteruse-cDNA-gene-expression-library to isolate those cDNA clones which code the uterine megadalton proteins. The extensions of various positive cDNA clones done by the RT-PCR-technique allow the sequencing of the isolates proteins. Results: More myofibrill proteins could be isolated: Titin is a >3000 kDa large filamentous protein, and single molecules extend the filament system. The determination of the cDNA sequence has shown that the titin filament is formed by a single giant 27,000-residue long polypeptide chain. The titin peptide is modular in structure and different module arrangements are expressed in different areas of the myometrium by differential splicing. The titin molecule contains a class of unique sequence insertions. Among these sequences are phosphorylation sites, a serin/threonine kinase domain and binding sites for muscle-specific calpain proteases. It is thus likely that the titin filament also plays a role in myofibrillar signal transduction pathways to coordinate the contraction of labour. Conclusion: Overexpression of titin might be in some cases the cause of premature labour and therefore antagonising its expression might be largely more effective than the tocolytic agents at present.