ISO-2-2  Association studies of cytokine genes and preeclampsia in Taiwan

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[Objective] To examine whether the cytokine gene polymorphisms could be used as markers of susceptibility for preeclampsia in Taiwan.[Methods] We genotyped Taiwanese population (102 women with preeclampsia and 148 controls) for the following cytokine gene polymorphisms: promoter region and exon 5 of the interleukin (IL)-1\(\beta\) gene, intron 3 and promoter -590 region of IL-4 gene, promoter -238 region and -308 region of tumor necrosis factor (TNF)-\(\alpha\). The association between the genotype and disease was examined by Chi-square tests. [Results] We found no significant differences in the genotype distributions and allele frequencies for the IL-1\(\beta\) gene and IL-4 gene between preeclampsia and control groups. However, the polymorphisms of the TNF-\(\alpha\) gene at promoter -308 region and haplotype analysis showed a significant association with susceptibility to preeclampsia in the Taiwanese population.[Conclusion] In our series, we observed that polymorphisms of TNF-\(\alpha\) gene play a role in the development of preeclampsia in the Taiwanese women. It is helpful for us to obtain more accurate results between genetic susceptibility and preeclampsia.

ISO-2-3  Magnesium decrease inflammatory cytokine production: a novel innate immunomodulatory mechanism

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[Objective] To determine if magnesium sulfate (MgSO\(_4\)) influences inflammatory cytokine production.[Methods] MgSO\(_4\) 4 exposure before preterm birth reduces the risk of cerebral palsy. As neonatal inflammatory cytokine levels correlate with neurologic outcome, we assessed the effect of MgSO\(_4\) on cytokine production within mononuclear cells, cord blood mononuclear cells (CBMCs) and maternal blood from women receiving parenteral MgSO\(_4\). This study was approved by the institutional review board.[Results] In vivo MgSO\(_4\) substantially reduced maternal TNF-\(\alpha\) and IL-6 production. We next exposed term and preterm CBMCs to MgSO\(_4\) in vitro and found a significantly reduced frequency of neonatal monocytes producing cytokines under constitutive and TLR-stimulated condition as measured by intracellular cytokine staining. Decreased cytokine production was linked to lower cytokine and 1kB\(\alpha\) gene expression and diminished NF-\(\kappa\)B activation. Reduced cytokine production was seen following exposure to different TLR ligands, suggesting that magnesium acts intracellularly, directly influencing NF-\(\kappa\)B or 1kB\(\alpha\) activity.[Conclusion] Our findings potentially elucidate the mechanism by which MgSO\(_4\) reduces the risk of cerebral palsy and establishes a new paradigm for innate immunoregulation, whereby magnesium plays a critical regulatory role in NF-\(\kappa\)B activation, cytokine production, and disease pathogenesis.

ISO-2-4  Predictive factors for peripartum cesarean hysterectomy in women with placenta previa

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[Objective] The aim of the study was to identify predictive factors for peripartum hysterectomy in women with placenta previa. Also construct the equation of probability of peripartum hysterectomy with placenta previa.[Methods] We prospectively reviewed all pregnancies with a diagnosis of placenta previa during the period January 2005 - June 2012. Data regarding the reproductive history and peripartum outcomes were analyzed. Medical records were reviewed for demographic characteristics including age, parity, gestational age at delivery, previous cesarean section, previous previa, antepartum bleeding, placental location, and degree of previa. Statistics were analyzed by Mann-Whitney's U test and Pearson's chi-square test. Logistic regression was used to assess the relationship between predictive factors and cesarean hysterectomy.[Result] Four-hundred and twelve women were selected. Peripartum cesarean hysterectomy was performed in 27 patients (6.6%). Multiparity, history of abortion, previous cesarean section, total placenta previa and prevalence of lacuna were more common in the cesarean hysterectomy group.[Conclusion] We concluded that in women with placenta previa, history of abortion, previous cesarean section, multiparity, and a total previa are strongly associated risk factors for peripartum hysterectomy. The equation was constructed by combining these variables was as follows: Probability of peripartum cesarean hysterectomy in placenta previa: = 1 / (1 + exp [-10.8 + (0.145 \text{age}) + (0.489 \text{multiparity}) + (0.639 \text{previous previa}) + (0.935 \text{previous abortion}) + (3.838 \text{previous cesarean}) + (-1.077 \text{placenta anterior}) + (-2.038 \text{placenta posterior}) + (0.984 \text{placenta previa totalis}) + (0.188 \text{placenta previa partialis})].