ISP-17-3  Th1/Th2 immune polarity induced by invariant NK cell stimulation determines the incidence of mouse miscarriage

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[Objective] Invariant NKT (iNKT) cells play a central role in the determination of Th1/Th2 T cell polarity. It is previously reported that iNKT-specific stimulation can cause miscarriage in mice, although its immunological mechanism is not fully elucidated. This study aimed to clarify the involvement of iNKT in the etiology of miscarriage focusing on Th1/Th2 polarity. [Methods] α-GalCer (AGC) stimulates Th1 polarity of iNKT cells, whereas OCH Th2 polarity. AGC and OCH were injected to pregnant C57BL/6 mice intraperitoneally at 9.5 dpc. The incidence of miscarriage was evaluated at 72 hr after the administrations. Additionally, the effect on Th1/Th2 polarity shift was examined by measuring IL4/IFN-γ mRNA expression ratio in the splenocytes. [Results] The rate of in-utero fetal absorption was significantly lower in OCH administration (8.2%) than that in AGC administration (59.2%). AGC stimulation up-regulated IFN-γ and OCH stimulation preferentially induced IL-4 expression rather than IFN-γ in the splenocytes, whereas the IL-4 induction after AGC stimulation was weak. [Conclusion] Th2 polarity but not Th1 induced by iNKT stimulation is protective against the miscarriage. Our findings imply the involvement of iNKT-dependent Th1/Th2 polarity in the pathophysiology of miscarriage.

ISP-17-4  How do the women feel after having NIPT? A year later survey among 3000 women

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[Objective] To explore women’s mood and attitude regarding NIPT among women who have given birth after underwent NIPT. [Methods] A mail-in survey concerning women’s feedback on NIPT and genetic counseling was performed as a clinical study by the Japan NIPT consortium. Women who received NIPT and have got negative result were subjected. This study was obtained approval from ethics committees. [Results] Responses from 2923 women were analyzed. It revealed that the women had high satisfaction rating even after a year. It denotes most of the same tendency between the day of first reaction for NIPT and a year later reaction. The necessity of genetic counseling was high rated (90%). They well understood that the feature and the limitation of NIPT and perceived the need of special care for women who had positive result. In the result of first reaction for NIPT, 96.5% of the women with negative test results indicated that they would choose NIPT in their next pregnancy, but the rating of choosing NIPT decreased to 75% in a year later. [Conclusion] We confirmed that the manner of the genetic counseling we conducted created an opportunity for pregnant women to sufficiently consider prenatal testing. In the clinical application of NIPT, an appropriate genetic counseling is essential. A more careful approach was considered to be necessary for women who received positive test results.

ISP-17-5  Noninvasive Prenatal Screening and its Relevance to Clinical Practice: Update on Clinical Outcome Metrics on Over 85,000 Cases

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[Objective] The verifi® noninvasive prenatal test (NIPT) has been available through Illumina's accredited clinical lab since February 2012. In follow-up to Illumina's first published clinical experience paper (Futch et al., 2013), this study highlights continued efforts to provide clinically relevant metrics for chromosomes 21, 18, and 13. [Method] Outcome information (karyotype/birth outcome) was requested from providers for singleton samples reported as aneuploidy detected (AD) or aneuploidy suspected (AS) for chromosomes 21, 18, or 13. Voluntary outcome reporting was encouraged for all discordant outcomes. [Results] Of 86,658 cases, 85,286 (98.4%) met inclusion criteria for NIPT result reporting, 101 (0.1%) were cancelled for technical reasons and 1,259 (1.5%) for administrative reasons. Average turnaround time was 3.3 business days. Of 85,286 reported cases, there were 2,142 (2.5%) positive results: 1,858 AD (2.2%) and 284 AS (0.3%). Informative clinical outcomes were available for 851 (39.7%) positive cases. Of 85,286 reported samples, 108 (0.13%) AD cases were reported as putative false positives: 15 (0.02%) false negatives were reported. The observed overall positive predictive value was 94.2% for AD samples and 88.9% for AD/AS samples combined. The overall observed negative predictive value was >99.9%. [Conclusion] Since 2012, there have been improvements in turnaround time and cancellation rates, as well as a significant decrease in the aneuploidy suspected results. Information about clinical performance of NIPT aids in appropriate pre- and post-test counseling.