

109 The number of ovulations newlywed women required to conceive a clinical pregnancy - A study on the efficiency of human reproduction - Y. Yorozu, Sapporo Maternity Hospital, Hokkaido.

An investigation of the efficiency of human reproduction in vivo was carried out by assessing how many ovulations newlywed women required to conceive clinically.

One hundred and thirty-three women (mean age: 26.4) with regular menstruation cycles, who were diagnosed to be pregnant within one year after marriage and who had never used any contraceptive method, were used for this study. All the women were presumed to have had one ovulation per one cycle. There were a total of 483 ovulations for 133 pregnancies. The mean value required for conception in this study of 133 newlywed women was 3.63 ovulations, which means that the reproductive efficiency rate of one ovulation was 27.5%.

In an analysis of the influence of the women's age, the mean number of ovulations required for conception in women below the age of 24 years (n=43), between the ages of 25 and 29 years (n=68), and 30 years or more (n=22) were 2.91 ovulations, 3.90 ovulations, and 4.23 ovulations, respectively. Increasing age was supposed to decrease the reproductive efficiency rate.

Of 125 pregnancies followed up, 14 pregnancies (11.2%) were aborted spontaneously before 24 weeks of gestation.

110 Change of pH and Ca at fertilization. Y. Shiina, M. Hiroi, K. Doi*, Dept. Obst. and Gynec., Yamagata Univ. Sch. Med., Yamagata, *Dept. physiol., Yamagata Univ. Sch. Med., Yamagata.

We directly measured intracellular Ca concentration ([Cai]) of mouse oocyte at fertilization. When oocyte fertilized, [Cai] increased temporally and spatially. The two kind of [Cai] increasing patterns were classified. One is the non periodic change pattern (A). Another is the periodic change pattern (B). Immediately after ovulation (at 13hr after hCG injection) all of oocytes showed A pattern (100%). At 14hr, B type oocytes appeared (26.1%). At 16hr, most of oocytes showed B pattern (68.4%). So we presume that oocyte probably matured soon after ovulation, consequently [Cai] in oocyte was changed to periodic pattern. A type oocyte probably won't develop, however it is not examined yet. When 13hr oocytes (all A type) were incubated for 6 hrs and fertilized, then B type oocytes appeared. The maturation of oocyte seems to be required to incubation. When [Cai] and [pHi] were simultaneously measured, [pHi] was not changed. PH seems to be not so significant for the maturation of mouse oocyte.

111 Effects of antiphospholipid antibodies on prostacyclin production by cultured human vascular endothelial cells. K. Kaida, M. Suzuki, Y. Hirao, H. Okada, Y. Hayashi, K. Aoki, K. Ikuta, M. Manzai, S. Hanada, Y. Yagami, Dept. Obst. and Gynec., Nagoya City Univ. Med. Sch., Aichi.

In this study, effects of purified IgG from recurrent aborter's serum with antiphospholipid antibodies, and β_2 -glycoprotein 1 (β_2 -GP1) which was one of cofactors, on PGI₂ production by cultured human vascular endothelial cells (VEC), were examined. IgG was isolated by DEAE-Sephacel chromatography. VEC of third serial passages at confluency were preincubated for 3 hours with culture medium containing IgG (2 mg/ml) or IgG (2 mg/ml) plus β_2 -GP1 (20 μ g). After washing, VEC were incubated for 1 hour with fresh culture medium 1 ml. After having been extracted from culture medium, 6-keto PGF₁ α was measured by RIA. By addition of β_2 -GP1 to normal controls' IgG, 6-keto PGF₁ α levels increased from 2.13 ± 0.36 (pg/10⁴ viable cells) (mean \pm SE) to 7.14 ± 3.21 , (n=5). But, by addition to patients' IgG, these did not increase but rather decreased from 3.81 ± 0.66 to 3.09 ± 0.89 , (n=5). After removal of IgG and β_2 -GP1, PGI₂ production was inhibited in the patient group compared with the control group. It was suggested that antiphospholipid antibodies with β_2 -GP1 inhibited PGI₂ production by human vascular endothelial cells.