P-12 The Role of Wee1 Kinase in Primordial-Primary Follicle Transition

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Objectives: Despite of importance of the primordial follicle recruitment in female reproduction, factors and mechanisms for this process are poorly understood. By using subtractive hybridization method, we identified list of differentially expressed genes in the primordial follicles, including wee1 kinase. Wee1 kinase phosphorylates and inhibits cdc2 and creates an interphase of the cell cycle. Objectives of the present study were to evaluate expression of wee1 transcript and protein, and to elucidate and role of wee1 kinase in the follicular transition from primordial (PMF) to primary (PRIF).

Materials and Methods: To confirm the differential expression of wee1 transcript, each stage follicles were collected by using laser capture microdissection and analyzed by RT-PCR. Immunohistochemistry and Western blot was used for evaluating localize the wee1 protein expression. To determine the role of wee1 in early follicular growth, neonatal ovaries were cultured with increasing doses of wee1 antibody (0, 1, 10, 100 ng/ml). Number of growing follicles, oocyte diameter, FSHR expression and amount of phosphorylated cdc2 were measured at 4 day and 8 day of culture.

Results: We confirmed the higher wee1 mRNA and protein expression in the PMF than PRIF. Wee1 protein expression was oocyte-specific. We found more growing follicles in the ovaries cultured with 10 and 100 ng/ml wee1 antibody than in control ovaries. We observed increase in FSH receptor expression but decrease in phosphorylated cdc2 concurrent to the follicular growth.

Conclusions: Results from the present study strongly suggest that the presence of wee1, a universal mitotic inhibitor, in oocytes of the early stage follicles may play a role in the arrest of meiotic cell cycle of primary oocytes at the PMF stage as well as in the arrest of PMF growth.

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P-13 세포내 Ca^{2+} 고갈에 의한 생쥐 난자막의 Ca^{2+}-channel의 존재에 대한 연구

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서 론: 다양한 세포에서 세포내 Ca^{2+} 저장고가 고갈되면 세포내 Ca^{2+} 농도의 변화가 일어났다. Ca^{2+} 저장고의 고갈은 세포막의 Ca^{2+} 투과성을 조절하여 세포내 Ca^{2+} 농도를 조절한다. 근육세포 및 백혈구에서 Ca^{2+} 저장고가 고갈되면 세포내 기관으로부터 세포질로 Ca^{2+} influx factor (CIF)를 분비하게 되며,