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Correlation Among Follicle-stimulating Hormone, Insulin-like Growth Factor-I and Aromatase Expression with Oocyte Maturation in an Assisted Reproductive Program --Manuscript Draft--

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Abstract:	<p>Background. Follicular fluid of oocyte play important roles in oocyte quality, which can increase the success rate of assisted reproductive technology (ART) program. Oocyte maturity is influenced by the follicular fluid's chemical components, including insulin-like growth factor (IGF)-I, which increases follicle-stimulating hormone (FSH) receptor; thereby increasing levels of intracellular cyclic adenosine monophosphate as primary mediator of FSH stimulation in aromatase expression.</p> <p>Materials Methods. This was analytic correlational study with a cross-sectional approach in ART patients program at Dr. Hasan Sadikin Hospital Bandung. The $p < 0.05$ considered as significance.</p> <p>Results. Mature and immature oocytes showed significant differences in FSH expression ($p=0.03$). The relationship of IGF-I and oocyte maturity showed no statistical significance ($p=0.192$). The median ratio of mature oocytes to total oocytes was 0.71; those with a median prevalence ratio > 0.71 showed strong FSH expression, which 1.71-fold higher than those with a lower proportion of mature oocytes. The aromatase expression in the follicular fluid of those patients with a median prevalence ratio of mature oocytes > 0.71 was 1.55-fold higher than in those with lower proportion of mature oocytes, who exhibited aromatase-negative-expression in the follicular fluid.</p> <p>Conclusion. Higher aromatase expression results in higher IGF-I and FSH expression in follicular fluid.</p>	
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Original Article

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Running title:

Follicle Stimulating Hormone, Insulin-like Growth Factor-I and Aromatase Expressions with Oocytes maturation in an Assisted Reproductive Program

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ABSTRACT

Background. Follicular fluid of oocyte play important roles in oocyte quality, which can increase the success rate of assisted reproductive technology (ART) program. Oocyte maturity is influenced by the follicular fluid's chemical components, including insulin-like growth factor (IGF)-I, which increases follicle-stimulating hormone (FSH) receptor; thereby increasing levels of intracellular cyclic adenosine monophosphate as primary mediator of FSH stimulation in aromatase expression.

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Results. Mature and immature oocytes showed significant differences in FSH expression ($p=0.03$). The relationship of IGF-I and oocyte maturity showed no statistical significance ($p=0.192$). The median ratio of mature oocytes to total oocytes was 0.71; those with a median prevalence ratio > 0.71 showed strong FSH expression, which 1.71-fold higher than those with a lower proportion of mature oocytes. The aromatase expression in the follicular fluid of those patients with a median prevalence ratio of mature oocytes > 0.71 was 1.55-fold higher than in those with lower proportion of mature oocytes, who exhibited aromatase-negative-expression in the follicular fluid.

Conclusion. Higher aromatase expression results in higher IGF-I and FSH expression in follicular fluid.

Keywords: Expression of aromatase, IGF-I, FSH and oocyt maturation