Parameter Penduga Perolehan Oosit Matang Yang Dapat Dibuahi Berdasarkan Analisis Nisbah Amh, Inhibin-B, Igf-2 Dalam Serum Dan Zalir Folikel Pada Fertilisasi In Vitro = Predictive Parameter For Fertilizable Mature Oocytes Recovery Based On Analysis Of The Ratio Of Amh, Inhibin-B, Igf-2 In Serum And Follicular Fluids In In Vitro Fertilization

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Abstrak

Pendahuluan: Angka keberhasilan FIV di Indonesia sekitar 32-35%. Salah satu penyebab pencapaian yang rendah ini adalah mutu oosit yang dinilai secara mi-kros-kopik pada saat panen oosit. Dari sekian banyak faktor yang berperan dalam pembentukan oosit matang bermutu baik diduga yang paling menentukan per-olehan oosit ma-tang, jumlah fertilisasi, dan jumlah embrio yang dipindahkan ke ute-rus pada FIV adalah AMH, inhibin-B, IGF-2 dan nisbahnya.
Bahan dan metoda: Kajian analitik potong-lintang pengukuran berulang dilaku-kan pada bu-lan September 2013-Agustus 2014 di Rumah Sakit Anak dan Bunda Harapan Kita, Jakarta. Sebanyak 38 pasien berumur 26-42 tahun yang mengikuti program FIV diukur kadar AMH, inhibin-B, IGF-2 saat basal, pencetus, panen oosit dalam serum dan dalam zalir folikel. Analisis regresi linear digunakan untuk memperoleh faktor penduga jumlah perolehan oosit matang, jumlah fertilisasi, dan jumlah embrio yang dipindahkan.
Hasil: Parameter penduga perolehan oosit matang adalah inhibin-B serum panen oosit dan folikel antral basal (FAB) total. Parameter penduga jumlah fertilisasi adalah FAB to-tal, nisbah inhibin-B pencetus terhadap inhibin-B basal, dan nisbah IGF-2 pen-cetus terhadap inhibin-B pencetus. Parameter penduga jumlah embrio yang dipin-dahkan adalah FAB total, inhibin-B panen oosit, dan nisbah inhibin-B panen oosit terhadap inhi-bin-B pencetus.
Pada analisis bivariat area under curve (AUC) terbesar (77,4%) ditemukan pada titik-potong in-hi-bin-B serum panen oosit. Kadar inhibin-B panen oosit yang lebih tinggi dari 131,16 ng/ mL adalah akurat untuk menetapkan kematangan oosit de-ngan ke-pe--kaan (sensiti-vitas) 84% dan kekhasan (spesifisitas) 69,2%.
Simpulan: Inhibin-B serum saat panen oosit berhubungan dengan pembentukan oo-sit matang dan normal sehingga dapat dijadikan parameter penduga perolehan oosit ma-tang dan jum-lah em-brio yang terbentuk. Ditemukan parameter-parameter baru, yaitu (1) nisbah inhibin-B pen-ce-tus terhadap inhibin-B basal serum, dan nisbah IGF-2 pen-cetus terhadap in-hibin-B pencetus serum untuk menduga jumlah fertili-sasi; (2) nisbah inhibin-B pa-nen terhadap inhibin-B pen--cetus serum untuk menduga jumlah em-brio yang dipindahkan ke uterus pada FIV.
.....Background: The success rate of IVF in Indonesia was 30-35%. This low rate was caused by the microscopically evaluated oocyte quality that was obtained by ovum pick-up (OPU). The determinatively contributing factors for the formation of good quality mature oocytes, which are considered to be used as predictive parameter for mature oocytes recovery, number of fertilization, and number transferrable embryos in IVF, are AMH, inhibin-B, IGF-2, and their ratios. Therefore, the study to determine the correlation of those factors with the formation of ferti-li-zable mature oocyte in IVF program is necessary.
Materials and methods: An analytic cross-sectional repeated measurements study was conducted from

September 2013 until August 2014 at Harapan Kita Mother and Chil-d Hospital, Jakarta. There were 38 patients aged between 26-42 years who par-ticipated in the IVF program; all of them underwent measurement for serum AMH, inhibin-B, and IGF-2 levels at basal, trigger, and OPU times. Predictive parameters for the number of mature oocytes, fertilizable oocytes, number of embryos transferred were analysed using linear regression.
Results: Predictive parameter for the number of mature oocytes are inhibin-B at OPU and total basal antral follicle (BAF) count. Predictive factors for the number of fertili-za-tion are total BAF count, the ratio of inhibin-B at triggering to inhibin-B at basal ti-mes. Predic-ti-ve factors for the number of embryos transferred are total BAF, inhibin-B at OPU, and the ratio of inhibin-B at OPU to inhibin-B at triggering time.
Using bivariate analysis, at the largest area under the curve (AUC) which was as high as 77.4%, the cut-off point of serum inhibin-B at OPU was found. The serum inhibin-B level at OPU higher than 131.16 ng/mL is accurate for determining the oocyte ma-turity (84% sensitivity and 69.2% spe-cificity).
Conclusions: Serum inhibin-B at OPU correlates with the formation of both mature and normal oocytes, thus it can be used as a predictor for the number of mature oo-cytes recovered and the number of embryos transferred. New parameters are found, those are: (1) the ratio of inhibin-B at triggering to inhi-bin-B in serum at basal times; and the ratio of IGF-2 at triggering to inhibin-B in serum at triggering times to pre-dict the number of fer-tilization; (2) the ratio of inhibin-B at OPU to inhibin-B in se-rum at triggering times to pre-dict the number of embryos transferred.