Upaya preservasi fungsi ovarium dengan melakukan vitrifikasi korteks dan folikel pre-antral = Ovarian tissue and pre antral follicle vitrification as a method for ovarian preservation

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Abstrak

Latar belakang: Vitrifikasi folikel pre-antral menjadi pilihan dalam upaya preservasi fungsi reproduksi karena dapat menurunkan risiko mikrometastasis sel kanker akibat transplantasi korteks ovarium serta tidak dipengaruhi oleh perfusi jaringan.
Tujuan: Memperoleh upaya preservasi fungsi ovarium yang efektif dengan penilaian apoptosis folikel pre-antral.
Tempat: Departemen Obstetri Ginekologi Fakultas Kedokteran Universitas Indonesia - RS Dr. Cipto Mangunkusumo dan RS Fatmawati Jakarta.
Metode: Studi ini merupakan penelitian eksperimental untuk menilai apoptosis folikel pre-antral pasca vitrifikasi. Folikel pre-antral segar merupakan kelompok kontrol.
Hasil: Korteks ovarium didapatkan dari 6 enam pasien kanker serviks dan kanker payudara berumur 30-37 tahun yang menjalani operasi ooforektomi. Tidak terdapat perbedaan morfologi folikel primordial, folikel primer dan folikel sekunder dari korteks ovarium segar dan korteks ovarium pasca vitrifikasi. Dari 6 sampel korteks ovariumSeratus enam puluh satu berhasil di-isolasi 161 folikel pre-antral berhasil di-isolasi dengan 70 % di antaranya merupakan folikel sekunder. Tidak tampak perbedaan morfologi folikel pre-antral berdasarkan kriteria membran basalis, sel granulosa, zona pelusida dan oosit. Rerata ekspresi mRNAgen FasL folikel pre-antral segar adalah 0,43 ± 0,20 dibandingkan 0,51 ± 0,20 pada folikel pre-antral pasca vitrifikasi (nilai p = 0,22). Rerata ekspresi mRNAgen kaspase-3 folikel pre-antral segar adalah 0,56 ± 0,49 dibandingkan 0,27 ± 0,21 pada folikel pre-antral pasca vitrifikasi (nilai p = 0,233). Satu folikel sekunder dari korteks ovarium segar berhasil tumbuh menjadi folikel antral lanjut pada hari ke-6 kultur.
Simpulan: Vitrifikasi folikel pre-antral terbukti tidak menyebabkan perubahan morfologi folikel dan peningkatan ekspresi gen mRNA FasL dan kaspase-3. Untuk membuktikan pengaruh vitrifikasi terhadap kesintasan folikel pre-antral pasca dalam kultur diperlukan penelitian lanjutan.
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Background: Pre-antral follicle vitrification should be considered as fertility preservation method because it lowers the risk of cancer micrometastasis of ovarian tissue transplantation and is not disturbed by ovarian tissue perfusion.
Objectives: To obtain the effective method of ovarian function preservation with pre-antral follicle apoptosis assessment.
Setting: Department of Obstetrics and Gynecology Faculty of Medicine Universitas Indonesia - Dr. Cipto Mangunkusumo General Hospital and Fatmawati Hospital Jakarta.
Method: This is an experimental study about apoptosis in pre-antral follicles after vitrification. Fresh pre-antral follicles served as a control group.
Results: Ovaries from six women between 3037 years of age who underwent oophorectomy due to cervical cancer or breast cancer were examined. There was no significant difference between primordial, primary

and secondary follicles morphology from fresh and warmed-vitrified ovaries based on basal membrane, granulosa cells, zona pellucida and oocytes. From 6 six ovarian cortex, 161 pre- antral follicles were isolated and 70 % of them is secondary follicle. There was no significant difference between the morphology of isolated pre-antral follicles from fresh and warmed-vitrified ovaries. The mean FasL mRNA expression on the fresh isolated pre-antral follicles was 0.43±0.20 versus 0.51±0.20 on the warmed-vitrified group (p=0.22). The mean caspase-3 mRNA expression on the fresh isolated pre-antral follicles was 0.56±0.49 versus 0.27±0.21 on the warmed- vitrified group (=0.233). One secondary follicle grew and developed to an antral follicle within 6 days of culture.

Conclusion: It was shown that vitrification did not affect pre-antral follicles morphology and mRNA expression of FasL and caspase-3 on isolated pre-antral follicles and ovarian cortex. Further studies are required to establish whether vitrification affect in vitro culture of pre-antral follicles