

FOLLICULAR STEROIDOGENESIS IN RANDOM START PROTOCOLS FOR OOCYTE CRYOPRESERVATION

Francesca Filippi, Marta Ciaffaglione, Elena Sanzani, Mattia Volpi, Giulia Galati, Edgardo Somigliana.

Infertility Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, Infertility Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, Infertility Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, Infertility Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, Department of Obstetrics and Gynecology, Sapienza University, Rome, Italy., Infertility Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy Dept of Clinical Sciences and Community Health, Università degli Studi di Milano, Milan, Italy.

Abstract Body

Background: Random start protocols are commonly used for oocyte cryopreservation in women with malignancies. However, available evidence is still insufficient for definitive conclusions on their effectiveness.

Materials and methods: This study aimed to compare the follicular steroidogenesis between women beginning ovarian stimulation in the follicular and luteal phase, respectively. Consecutive women with cancer who underwent random start ovarian stimulation were prospectively recruited. Those requiring letrozole assumption were excluded. Menstrual cycle phase was determined on medical history and ultrasound findings. All women received a standardized protocol with recombinant FSH, adding GnRH antagonists when a leading follicle with a mean diameter of 13-14 mm was detected, and triggering with GnRH agonists. At oocytes retrieval, follicular fluids were pooled, a sample was collected and frozen at -80°C. Samples were assayed concomitantly after thawing by liquid chromatography tandem mass spectrometry. The concentration of 15 steroid hormones [11-deoxycorticosterone, 11-deoxycortisol, 17-hydroxyprogesterone, 21-deoxycortisol, aldosterone, androstenedione, corticosterone, cortisol, cortisone, dehydroepiandrosterone, dehydroepiandrosterone sulfate, dihydrotestosterone, estradiol, progesterone, testosterone] were compared between the two groups.

Results: Seventy-one women were recruited. Thirty-three started ovarian stimulation in the luteal phase while the remaining 38 in the follicular phase. Baseline characteristics were similar between the two groups, except for a higher proportion of women taking oral contraceptives among those starting in the follicular phase. Cycle outcome did not differ, the median [interquartile range] number of frozen mature oocytes in women initiating in the luteal and follicular phase being 9 [5-14] and 10 [5-21], respectively ($p=0.42$). None of the tested steroid hormones differed. Comparable results emerged when excluding women who recently discontinued oral contraceptives and when comparing women initiating in the early rather than in the late follicular phase.

Conclusions: The endocrine microenvironment surrounding oocytes is not influenced by the phase of the menstrual cycle. This result further supports the validity of random start protocols.