J Assist Reprod Genet (2015) 32:1195–1196
DOI 10.1007/s10815-015-0507-1

FERTILITY PRESERVATION

Oocyte versus embryo cryopreservation for fertility preservation in cancer patients: guaranteeing a women's autonomy

Laura Rienzi[1] · **Filippo Maria Ubaldi**[1]

Received: 29 April 2015 / Accepted: 2 June 2015 / Published online: 17 June 2015

The increasing incidence of cancer, combined with higher survival rates in reproductive-aged women is generating growing scientific interest in the application of fertility preservation (FP) technologies for oncological patients [1, 2]. However, less than 5 % of these patients actually preserve their future fertility prior to treatment [3]. Upon examination of the extensive literature, a perception emerges that oocyte cryopreservation is not clearly indicated over embryo cryopreservation for FP. This misconception potentially generates confusion, reluctance, and doubts in the minds of ethics.

The promising developments in oocyte cryopreservation after the introduction of vitrification represent a strong incentive to provide FP counselling since the preservation, surveillance and restoration of fertility are becoming an integral part of women's care experiencing cancer [1]. However, some authors recommend caution in offering mature oocyte cryopreservation because few live births in cancer survivors have been reported, thus implicitly suggesting that embryo cryopreservation is the best approach for these patients. This recommendation is based on the theoretical assumption that evidence obtained in the infertile population [4, 5] are not valid for FP in cancer patients, whereas as for embryo cryopreservation, our belief is that approaches using the same technology on the same type of cells should be considered comparable. More probably, embryo cryopreservation is still offered for FP because some centres have not yet implemented oocyte vitrification protocols or do not feel comfortable with this new technology.

The issue of persevering (sp) oocytes instead of embryos is of considerable importance. Oocyte cryopreservation gives women reproductive autonomy. Notably, the use of male-partner/donor sperm to create embryos introduces several ethical, moral and legal concerns. For example, regarding the destiny of orphan embryos in case of death or separation, cancer diagnosis and treatment may lead to relationship complications that result in a higher risk of separation [6]. Women may thus find themselves in the troublesome situation of possessing no reproductive chances except for frozen embryos generated from an ex-partner's sperm thus rendering the entire FP procedure useless. Alternatively, in the case of donor sperm, the fate of frozen embryos will depend on the future partner's willingness to father a donor-child.

For these reasons, we emphasize that there are scientific, moral and ethical reasons to promote oocyte vitrification as the gold standard in female onco-fertility preservation. This is the only approach that allows women to manage their own fertility.

Finally, it is our sole intent with this communication to increase awareness of scientists and clinicians alike such that FP is considered an "individual right". In this way, counselling patients of their reproductive chances should facilitate the decision-making process, irrespective of attending social, emotional, and ethical issues.

Capsule Oocyte vs embryo cryopreservation for fertility preservation to guarantee female autonomy in reproduction.

✉ Laura Rienzi
rienzi@generaroma.it

[1] GENERA Centres for Reproductive Medicine, Rome, Italy

References

1. De Vos M, Smitz J, Woodruff TK. Fertility preservation in women with cancer. Lancet. 2014;384(9950):1302–10.
2. Ethics Committee of American Society for Reproductive Medicine. Fertility preservation and reproduction in patients facing gonadotoxic therapies: a committee opinion. Fertil Steril. 2013;100(5):1224–31.
3. Fertility preservation and consent. Lancet Oncol. 2014 Apr;15(4): 361.
4. Rienzi L, Romano S, Albricci L, Maggiulli R, Capalbo A, Baroni E, et al. Embryo development of fresh 'versus' vitrified metaphase II oocytes after ICSI: a prospective randomized sibling-oocyte study. Hum Reprod. 2010;25(1):66–73.
5. Cobo A, Meseguer M, Remohí J, Pellicer A. Use of cryo-banked oocytes in an ovum donation programme: a prospective, randomized, controlled, clinical trial. Hum Reprod. 2010;25(9): 2239–46.
6. Kirchhoff AC1, Yi J, Wright J, Warner EL, Smith KR. Marriage and divorce among young adult cancer survivors. J Cancer Surviv. 2012;6(4):441–50.