

Follow-up of elective oocyte cryopreservation for age-related reasons: utilisation of vitrified oocytes and reproductive outcomes of women who return.

E. Maes¹, J. Nekkebroeck¹, H. Tournaye¹, N. De Munck¹, M. De Vos¹

¹Universitair Ziekenhuis Brussel, Centre for Reproductive Medicine, Brussels, Belgium

Study question:

What is the come-back rate and what are the reproductive outcomes of women who previously had their oocytes cryopreserved to anticipate age-related fertility decline?

Summary answer:

Of all women who underwent elective oocyte cryopreservation, only 7.6% have so far returned to use these oocytes. Of those, 32.6% had an ongoing pregnancy.

What is known already:

Oocyte vitrification has become an established and efficient technology, which has facilitated the practice of elective oocyte cryopreservation for women who defer motherhood and wish to anticipate age-related fertility decline, for various reasons. Little is known about the utilisation of the vitrified oocytes of these “social freezers” and their reproductive outcomes. Follow-up data of reproductive behavior and outcomes in these women are needed for a comprehensive appraisal of social freezing.

Study design, size, duration:

We performed a retrospective observational single-centre follow-up study in a cohort of 563 women who underwent elective cryopreservation of oocytes to anticipate age-related fertility decline between January 2009 and November 2017.

Participants/materials, setting, methods:

A total of 563 women underwent 902 ART cycles for oocyte vitrification. Data were collected from computerised clinical charts. We evaluated reproductive treatment choices in social freezers who returned, warmed oocyte survival rates, fertilisation rates, embryo quality, the use of donor sperm, pregnancy rates, and live birth rates.

Main results and the role of chance:

Mean age at oocyte vitrification was 36.5y [95% confidence interval (CI) 36.3–36.6]. A mean number of 8.5 [95% CI 8.1 –8.8] oocytes were vitrified per cycle. Seventy-two women (12.8%) returned to the clinic for reproductive treatment at the moment of writing. In 43% of them (31/72), donor sperm was used for artificial insemination or ICSI. 7.6% (43/563) of women requested to have their vitrified oocytes warmed for ART, at a mean age of 42.1y [95% CI 41.5–42.7]. Their oocytes had been vitrified at a mean age of 38y. They underwent 72 warming cycles in total; overall survival rate of warmed oocytes was 73.4 %. The fertilisation rate was 66.8% and 64 warming cycles resulted in a fresh embryo transfer. In total, 25.6% (11/43) patients had an ongoing pregnancy after oocyte warming and fresh embryo transfer; the ongoing pregnancy rate (OPR) was 32.6% (14/43). Of women who returned, 32 underwent ≥1 ART cycles with oocyte retrieval (69 cycles in total), at a mean age of 38.9y [95% CI 37.9–39.9] and the OPR was 34.4%. Nineteen patients underwent

artificial insemination (15 with donor sperm), of whom 26.3% (5/19) had a live birth. Three patients had a live birth after oocyte donation.

Limitations, reasons for caution:

Due to the limited follow-up period, the return rate of social freezers is low and utilisation rates of cryopreserved oocytes are incomplete. Hence, the reproductive outcome of only a subset of social freezers is currently known. Of patients who returned for reproductive treatment, 40.3% have not used their vitrified oocytes.

Wider implications of the findings:

The majority of social freezers who returned have found a suitable partner to pursue motherhood. Whether their previous decision to undergo oocyte cryopreservation has enhanced the probability of a live birth will require confirmation in larger follow-up studies.

Trial registration number:

Non applicable

No
Not Applicable