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Obstetrics & Gynecology

VOLUME 13

Dasgupta's Recent Advances in Obstetrics and Gynecology

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10

CHAPTER

Social Egg Freezing

Nandita Palshetkar

INTRODUCTION

The range of assisted reproductive technology (ART) has significantly expanded since the birth of Louise Brown in 1978. Embryo and sperm cryopreservation are established treatments, however oocyte cryopreservation has only recently become available as an extra fertility preservation option for women.[1]

Female fertility experiences a gradual but considerable drop beyond the age of 32 years, with the decline accelerating after the age of 35 years. The primary reason for the drop in fertility associated with age is the reduction in the number of follicles and the decline in the quality of oocytes, which increases the likelihood of fetal chromosomal disorders and subsequent fetal loss.[2]

For several unmarried ladies who are advancing in age, the biological clock symbolizes a significant menace that endangers the potential of conceiving a biological offspring. Typically, the prospect of "running out of time" causes significant pressure for individuals, typically accompanied by additional social pressure and criticism from their surroundings. Cryopreserving oocytes presents a promising possibility to relieve this burden, contingent upon the emergence of a suitable partner. Oocyte cryopreservation is becoming increasingly popular since it enhances a woman's confidence in her capacity to conceive biological children of her own.[3]

Elective egg freezing does not ensure the ability to conceive, but it empowers women to have greater control over their reproductive potential.[4]

TERMINOLOGY

Oocyte cryopreservation, often known as "social egg freezing", is a widely used method for women to delay pregnancy and safeguard their fertility.

Currently, there is a lack of consensus over the terminology.

The phrase "social egg freezing" refers to the socioeconomic limitations that prompt women to undergo oocyte cryopreservation, although "elective egg freezing" is generally deemed acceptable by the majority of women. Some authors opt to utilize the term "fertility preservation" due to its proven usage in the realm of gamete cryopreservation for medical purposes. As a result,

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the practice of "nonmedical egg freezing" or "egg freezing for nonmedical purposes" emerged. Some argued against the use of "nonmedical freezing" as it was not deemed suitable. They claimed that the decision to cryopreserve oocytes for the purpose of safeguarding women against age-related fertility decrease should be regarded as a form of preventative medical treatment. The authors proposed the term "AGE banking" (oocyte banking for anticipated gamete exhaustion) as a more accurate description of the method to predict gamete exhaustion. Other terms commonly used to refer to social egg freezing include "planned oocyte cryopreservation", "oocyte cryopreservation for age-related fertility loss", and "elective egg freezing".[5]

SOCIAL VERSUS MEDICAL EGG FREEZING

Medical egg freezing refers to the use of egg freezing techniques for medical purposes, such as oncofertility. In many countries, the acceptance of certain behaviors is influenced by the perception that they are related to a condition and medically essential. This perception grants individuals a morally valid justification to seek and utilize these services.[5]

Social egg freezing refers to the practice of freezing eggs for nonmedical purposes. A primary incentive for healthy women opting for social egg freezing is their absence of a stable relationship or other significant milestones they deem necessary prior to starting a family. Some individuals view social egg freezing as contentious due to its artificial nature, potential concerns for women's health, and the medicalization of a societal issue. Social egg freezing is widely recognized as a rapidly expanding assisted reproductive technology in Europe, the UK, and other global regions, notwithstanding the debates surrounding it.[5]

PROCEDURE

Egg freezing is a procedure that entails the use of hormones to stimulate the ovaries, followed by the retrieval of a woman's eggs through the vagina. These eggs are then frozen and stored for future use. Vitrification, a flash-freezing technique, is the preferred method for egg freezing since it has shown higher rates of oocyte survival after thawing and greater chances of conception. This approach is approved by professional medical societies. Vitrification is a process that utilizes cryoprotectants and extremely fast cooling to harden cells, preventing the creation of ice crystals.[6]

Controlled Ovarian Stimulation Protocol and Oocyte Retrieval

The ovarian stimulation protocols consist of the gonadotropin-releasing hormone (GnRH) antagonist protocol, progestin-primed ovarian stimulation (PPOS) protocol, short GnRH agonist protocol, and long GnRH

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agonist protocol. Serum levels of follicular stimulating hormone, luteinizing hormone, and estradiol are assessed on either day 2 or day 3 of the menstrual cycle. The levels of hormones and the diameters of follicles are monitored on either day 5 or day 6 of stimulation, as well as on the following days. Oocyte final maturation is initiated when the size of two follicles reaches 18 mm and the estradiol level reaches around 150 pg/mL per follicle. The oocyte retrieval procedure is scheduled to take place 34–36 hours after triggering.[7]

Oocyte Denudation and Oocyte Freezing

Following retrieval, the oocytes are stripped of their surrounding cells, a process known as denudation, and subsequently examined to determine their maturity status. The oocytes are cryopreserved 2 hours after they are retrieved. Both metaphase II (MII) and metaphase I (MI) oocytes have been cryopreserved. Following a consultation with the patient, the remaining immature oocytes are cryopreserved. There are two methods for freezing oocytes—gradual freezing and vitrification. The cryopreserved oocytes are stored in cryogenic tanks filled with liquid nitrogen until the patients' subsequent visits.[7]

Oocyte Thawing

The Kitazato thawing kit (manufactured by Kitazato Supply Corporation) is utilized for vitrified oocytes. The Cryotop vitrification device, manufactured by Kitazato Supply Corporation, is put directly into the thawing solution and remains stationary for a duration of 1 minute. Following detachment from the Cryotop, the oocytes undergo a 3-minute treatment with the diluent solution, followed by a 5-minute treatment with the washing solution. Subsequently, they were transferred to the fundamental solution at a temperature of 20°C during a time frame of 1 minute. The oocytes are placed in the human tubal fluid culture medium and kept at a temperature of 37°C till insemination.[7]

Insemination, Embryo Culture, and Transfer

Fertilization is achieved by utilizing the matured oocytes that have endured a 3-hour incubation period. The chosen fertilization technique is intracytoplasmic sperm injection (ICSI). The initial examination of the embryos is performed 16–18 hours after ICSI. A normally fertilized embryo is characterized by the presence of two pronuclei (2PN) and a second polar body. An embryo culture is conducted using a sequential culture medium. The patients are engaged in discussions regarding the quantity and timing of embryo transfer, which are determined by the quality of the embryos. If blastocyst formation is detected, the remaining embryos are cultivated and then preserved through vitrification.[7]

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OPTIMAL TIMING OF OOCYTE CRYOPRESERVATION

Strategies to improve the clinical and ethical aspects of social freezing involve three distinct steps—raising public awareness, providing personalized, age-specific information and counseling, and offering predictive tests such as anti-Müllerian hormone measurements or antral follicle count. The primary goal of these efforts is to persuade women who are most likely to gain advantages from social freezing to seek medical attention before reaching the age of 35 years. Additionally, these measures aim to deter fertility clinics from explicitly focusing on women who have already exceeded the age at which favorable outcomes can be anticipated.[8]

Effective counseling should inform women that freezing their oocytes does not guarantee protection against age-related infertility, but rather provides an additional chance at conception.[2]

OPTIMAL NUMBER OF EGGS TO FREEZE

An additional significant concern pertains to the quantity of eggs to be preserved in order to ensure the possibility of conceiving at least one offspring. Determining the optimal number of oocytes is a complex task due to various aspects such as maternal age, maternal health, ovarian reserve, reproductive objectives, and paternal health. There is no amount of oocytes that can provide a guarantee. Most clinics advise the preservation of approximately 20 eggs, necessitating multiple procedures for the majority of women. According to two American prediction models that focus on in vitro fertilization (IVF)/ICSI treatments, it is estimated that around 20 oocytes are required to have a 75% chance of successfully having at least one kid, as long as the mother is under the age of 38 years. The models also demonstrate that the likelihood of success is strongly influenced by age and validate that the endeavor of preserving fertility in women beyond the age of 40 years is improbable to be successful.[4]

For women under the age of 35 years, freezing 8 or 10 oocytes resulted in a 40.8% or 60.5% chance of a successful live delivery per warmed oocyte, respectively. In order to have a reasonable possibility of achieving a pregnancy, it is necessary to have a minimum of 8–10 cryopreserved oocytes.[2]

CHANCE OF HAVING A CHILD

An appropriate inquiry pertains to the probability of conceiving a child. Prior research has demonstrated that frozen eggs are comparable in quality to fresh ones. However, there is a lack of conclusive evidence about the success rates of nonmedical elective egg freezing in achieving pregnancy. Primarily, we have heavily depended on results obtained from traditional IVF procedures. However, there is now emerging data regarding the utilization of egg freezing techniques.[4]

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Cobo et al., reported on a cohort of 137 women out of a total of 1,468 who underwent autologous IVF and subsequently returned for follow-up. A total of 9% of the women who froze eggs did so for elective purposes, encompassing both medical and nonmedical motivations. The overall pregnancy success rate, measured as the cumulative ongoing pregnancy rate/live birth rate (OPR/LBR) per patient, was about 60%.[4]

BENEFITS

The process of social egg freezing offers two significant advantages to women who plan on conceiving at a later stage in life—it grants them the opportunity to become a biological parent by utilizing their frozen and thawed eggs, and it diminishes the likelihood of having offspring with chromosomal abnormalities linked to ovarian aneuploidy.

The potential advantages of oocyte vitrification include increased fertility preservation at younger ages for several reasons:

- Enhanced success rates;
- Reduced number of unsuccessful IVF cycles caused by advanced maternal age, thereby minimizing emotional and financial distress; and
- Decreased reliance on donor oocytes if women freeze and store their own eggs.[3]

RISKS

Medical Risks of Social Egg Freezing and In Vitro Fertilization

The primary medical hazards linked with egg freezing are primarily attributed to ovarian stimulation, notably ovarian hyperstimulation syndrome. Mild-to-moderate ovarian hyperstimulation syndrome is characterized by symptoms such as fatigue, nausea, headaches, abdominal pain, breast tenderness, and irritability. However, these negative consequences may typically be effectively managed. Nevertheless, a small percentage of people, ranging from 0.1 to 2%, may encounter a severe condition known as ovarian hyperstimulation syndrome. This condition can lead to the formation of blood clots, difficulty breathing, abdominal pain, dehydration, and vomiting, which require hospitalization.

Women who undergo the process of using their frozen-thawed eggs to produce pregnancy will be exposed to the potential hazards associated with IVF. The hazards encompass the occurrence of numerous pregnancies, pregnancy-induced hypertension, preterm birth, cesarean delivery, and infants with low birth weight.[6]

Medical Risks of Pregnancy at an Advanced Age

Women who inquire about social egg freezing should be informed about the medical hazards to themselves and their potential kids that are linked to

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pregnancy at an advanced age, namely when the projected birth occurs after the age of 35 years.[6]

Women who conceive at a later stage in life face a higher likelihood of developing gestational diabetes, preeclampsia, requiring a cesarean delivery, and delivering a baby prematurely with low birth weight. Nevertheless, the extent of these dangers differs significantly, contingent upon the woman's health condition, and escalates with the advancing age of the mother at the time of childbirth.[6]

It is important to note that elective oocyte cryopreservation for nonmedical purposes does not mitigate the risk of maternal morbidity in women who conceive at an advanced age. Indeed, advanced maternal age is correlated with an increased likelihood of ectopic pregnancy and various problems such as preeclampsia, gestational diabetes, premature delivery, and low birth weight. Hence, it is imperative to enforce obligatory counseling for women who choose to cryopreserve oocytes, in order to inform them about the potential hazards associated with pregnancy at a later stage of life. The absence of significant obstetric and perinatal hazards in pregnancies resulting from the use of frozen oocytes is a reassuring indication that oocyte cryopreservation is not associated with any negative effects. Furthermore, the extended freezing of oocytes in liquid nitrogen does not have any impact on the success rates of IVF or the rate of having a normal number of chromosomes (euploidy).[2]

Risks to Offspring

Aside from the negative consequences related to premature birth and low birth weight, there is evidence indicating a slight rise in the likelihood of congenital structural abnormalities in children born through IVF. Furthermore, certain studies suggest that these children may have a small yet elevated risk of developing cancer and structural cardiac anomalies. Additional investigation is required to validate the hazards posed to offspring born through IVF and ascertain whether there are any special concerns linked with births resulting from cryopreserved eggs. The number is six.

Due to the new development of the vitrification technology, there is currently a lack of data regarding the long-term monitoring of children who have had this procedure. It is important to mention that variations in the levels of potentially harmful cryoprotectants lead to a theoretically distinct risk assessment following vitrification, in comparison to the traditional slow-freezing method.[9]

USE OF STORED OOCYTES

There is limited data available regarding the proportion of women who utilize their cryopreserved oocytes. The metric in question is referred to

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as the "usage rate", and it serves as a crucial concern for the practice of egg freezing for nonmedical purposes. Four survey-based studies have examined follow-up data on individuals working in the banking industry. One study revealed that just 50.8% of women who froze their eggs believed they would utilize them in the future. After 3 years, 29.2% of the women found it less probable to use cryopreserved oocytes compared to when they were frozen. This was related to their age range of 33–41 years at the time of vitrification and having recovered 6–20 oocytes. Out of these, only three women achieved successful conception of a child. According to a separate poll of 23 women, it was found that just two women had utilized their cryopreserved eggs at the time of the interview, and one of them successfully gave birth to a live baby. Noteworthy findings from these studies encompass the inclination to provide surplus oocytes for research purposes or to assist other women in infertility treatment. It is crucial to acknowledge that the afore-mentioned stance was taken at the time of their oocyte cryopreservation, but attitudes about donation may evolve with time.[2]

SOCIAL AND ETHICAL IMPLICATIONS

As previously mentioned, the term "social" is used to characterize the component of the medical strategy that is related to social interactions. Egg freezing serves as a means to counteract decreasing fertility rates and provide optimism for future families, representing the realization of an innate reproductive instinct.[2]

Oocyte cryopreservation can provide the possibility of having a biological child in the future, alleviating feelings of uncertainty, such as anxiety and tension. It also offers women the flexibility to make choices and ensures that any decision they make will be appropriate. Many women view oocyte cryopreservation as a potential solution for a future need, if they have established a stable family with a dependable and trustworthy spouse. In contrast, critics contend that this type of regulation incentivizes women to prioritize their careers at the expense of their families. Both of these stances demonstrate distinct perspectives on autonomy, with one advocating for social egg freezing as a suitable response to the broader social environment, while the other suggesting a potential diminishment of decision-making authority. Put simply, the conversation pertains to the concept of relational autonomy as it applies to decision-making. Human beings are inherently social creatures, and as such, they are never completely autonomous. Critics argue that this lack of complete independence results in a diminished ability to make individual decisions. The social backdrop, encompassing political and cultural factors, has the ability to influence decisions in one direction or another.

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Psychological Impact

It is crucial to provide women with accurate information regarding the current uncertainty regarding the effectiveness and safety of using their oocytes for reproductive purposes in the future. It is important for them to understand that the approach does not provide a guarantee of success, regardless of the quantity of preserved oocytes.[9,10]

CONCLUSION

Additional knowledge regarding fertility challenges and potential solutions for age-related infertility is valuable not only for delaying parenthood, but also for achieving a more definite and deliberate reproductive independence. This is desirable regardless of career demands and limited support services, in order to promote responsible parenting. Nevertheless, this information processing must also consider other equally significant considerations involving the potential creation of elevated and potentially inaccurate expectations, as well as the introduction of medical procedures to women of reproductive age.[11,12]

REFERENCES

1. Argyle CE, Harper JC, Davies MC. Oocyte cryopreservation: where are we now? Hum Reprod Update. 2016;22(4):440-9.
2. Alteri A, Pisaturo V, Nogueira D, D'Angelo A. Elective egg freezing without medical indications. Acta Obstet Gynecol Scand. 2019;98(5):647-52.
3. Cobo A, García-Velasco JA, Coello A, Domingo J, Pellicer A, Remohí J. Oocyte vitrification as an efficient option for elective fertility preservation. Fertil Steril. 2016;105(3):755-64.
4. Wennberg AL. Social freezing of oocytes: a means to take control of your fertility. Ups J Med Sci. 2020;125(2):95-8.
5. De Proost M, Paton A. Medical versus social egg freezing: The importance of future choice for women's decision-making. Monash Bioeth Rev. 2022;40(2):145-56.
6. Petropanagos A, Cattapan A, Baylis F, Leader A. Social egg freezing: risk, benefits and other considerations. CMAJ. 2015;187(9):666-9.
7. Yang IJ, Wu MY, Chao KH, Wei SY, Tsai YY, Huang TC, et al. Usage and cost-effectiveness of elective oocyte freezing: a retrospective observational study. Reprod Biol Endocrinol. 2022;20(1):123.
8. Mertes H, Pennings G. Social egg freezing: for better, not for worse. Reprod Biomed Online. 2011;23(7):824-9.
9. Soop D. Social oocyte freezing. Facts Views Vis Obgyn. 2010;2(1):31-4.
10. Wennberg AL, Schildauer K, Brännström M. Elective oocyte freezing for nonmedical reasons: a 6-year report on utilization and in vitro fertilization results from a Swedish center. Acta Obstet Gynecol Scand. 2019;98(11):1429-34.
11. Tozzo P, Fassina A, Nespeca P, Spigarolo G, Caenazzo L. Understanding social oocyte freezing in Italy: a scoping survey on university female students' awareness and attitudes. Life Sci Soc Policy. 2019;15(1):3.
12. Inhorn MC. The egg freezing revolution? Gender, technology, and fertility preservation in the twenty-first century. In: Emerging Trends in the Social and Behavioral Sciences. Hoboken, NJ: John Wiley and Sons; 2017. pp. 1-4.

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The Recent Advances in Obstetrics and Gynecology is in an ongoing series, which aims at helping postgraduates updating themselves with the latest technologies and treatment updates which may not be covered in their postgraduate teaching. It is aimed for residents doing their postgraduation. This book involves a collection of focused articles from renowned teachers and authors from all over the country who bring their years of expertise and experience to you. Postgraduate students receive a very short study leave prior to their final examinations. Through this book we wish to reduce your time to scour for updated guidelines, research papers, and evidence on topics of thematic interest. The authors address this paucity with this textbook series, which aims to unite senior, respected, and stalwart postgraduate teachers from all over India who have been mentors and guides to generations of students. Each chapter focuses on traditional concepts as well as the most modern updated evidence on the issues at hand. The book will be a useful compendium for postgraduate students and readers who wish to keep themselves updated with the latest evidence.

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He is the Recipient of the Young Gynecologist Award by Asia and Oceania Federation of Obstetrics and Gynaecology. He has won the prestigious FOGSI Corion, Shanti Yadav Award, Kumud Tamaskar and Praveen Mehta Awards, for his research papers. He has also won the best Youth Council Member Award for MOGS twice.

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