Poonam Shodh Rachna(ISSN 2456-5563)
(A Multidisciplinary, Peer Reviewed and Refereed Research Journal)
Vol. 3,Issue.V, May 2024, PSR-2405050

OOCYTE DONATION PROGRAMME AND SURROGACY

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ABSTRACT
The possibilities of assisted reproductive technology for women with low oocyte quantity and quality have increased with the use of donor oocytes. Compared to IVF using autologous oocytes, in vitro fertilisation (IVF) using oocyte donation is thought to result in higher rates of implantation, pregnancy, and livebirth. Reproductive outcome is decreased by maternal age, infertility factors, BMI, smoking status, and ethnicity. Oocyte banks have been established as a result of rising demand and successful oocyte vitrification programmes, which eliminates the need for donor-recipient cycle synchronisation and permits egg sharing. Prematurity, low birth weight, very low birth weight, pre-eclampsia, pregnancy-induced hypertension, and the need for an operative delivery are all at an increased risk. The conventional idea of parenthood has been challenged by recent developments in assisted reproduction technology. Thousands of people leave their home countries each year to travel abroad in order to avoid laws that are restrictive or to take advantage of cheaper prices. Similar to this, surrogacy presents a number of legal and bioethical challenges. An increasing number of prospective parents are travelling abroad for treatment due to the diversity of laws, policies, and access to ART across the globe. The absence of regulations pertaining to cross-border surrogacy in low-income countries has the potential to compromise the rights and dignity of women, since even a small amount of money can have a substantial impact on their purchasing power. The goal of international cooperation should be to establish a global regulatory structure that would serve as a source of guidelines for national governments.

KEYWORDS: *Assisted reproductive technology, Oocyte donation, Screening and selection, Surrogacy, Gestational carriers, Ethics and legal cases, Consent and Privacy.*

INTRODUCTION

Oocyte donation is a natural progression of IVF technique, intended to get beyond oocyte-related barriers to reproduction. Furthermore, couples who may require both egg and sperm donation due to infertility caused by both male and female factors may find that embryo donation is a viable alternative. Since poor responder protocols are rarely required and worries about hyper stimulation are virtually removed with an antagonist protocol with gonadotropin agonist trigger, oocyte donor stimulation is comparable to traditional IVF but may be less complex. Relatively simple tasks include synchronizing the oocyte donor and recipient and preparing the

recipient's endometrium. Cryopreserved embryo recipients have it much easier—all they need to do is prepare their uterus, and they don't even need to coordinate with the donors. Third-party parenting concerns should be addressed by medical screenings and psychosocial counseling for both donors and recipients. Menopausal women over 50 can become pregnant again since oocyte and embryo donation gets beyond the majority of age-related barriers to conception in these women of advanced reproductive age. After oocyte donation, the perinatal results are comparable to those obtained with conventional assisted reproductive technologies, however there may be a higher risk of hypertensive problems during pregnancy. The age of the donor, who should ideally be under 35, is the primary factor limiting the success of oocyte donation. Age may cause some reduction in endometrial receptivity, but this uterine factor seems to have little elect when compared to the quality of the oocytes. Because of this, the age of the donor rather than the age of the recipient determines the ideal number of embryos to be transferred to the recipient. [1]

OBJECTIVE

To compare the outcomes from Oocyte donors and recipients and assess the clinical and laboratory results of oocyte donation cycles and to understand the combination of oocyte donors with surrogates (Gestational carriers).

HISTORY OF OOCYTE DONATION IN REPRODUCTIVE MEDICINE

Development of Egg Donation in Assisted Reproductive Technology

Two scientific teams from divergent continents—Australia and North America—worked concurrently to create the first donor in the mid-1980s pregnancy, citing instances of fruitful pregnancies in These pregnancies were created in 1984 using two distinct approaches. The Los Angeles collective, J. Buster and M. Bustillo led the first insemination. Donors using the recipient's spouse's sperm, then uterine lavage using a catheter that was made specifically for the purpose. Five days after insemination, the embryo recovered, and oral contraceptives were used to synchronize the recipient's endometrium. P. Lutjen (Australia), however, is largely recognized for having performed the first successful donor oocyte cycle. In Nature, he reported on a 25-year-old patient who had primary ovarian insufficiency. It was noteworthy because the recipient partner's sperm was used to inseminate donor oocytes from an infertile patient (with tubal factor). Combining oral estradiol validate with an intra-vaginal progesterone peccary allowed the endometrium to synchronize. The recipient's uterus received the resultant single two-cell embryo, which was then kept on constant progesterone and estrogen support during the pregnancy, with a scheduled cesarean section delivery at 38 weeks. This historic occurrence in a recipient who lacked her own ovarian function confirmed the findings that exogenous Progesterone and estrogen could consistently produce an open endometrium. [2]

INDICATION FOR USE OF EGG DONATION

Individuals with ovarian dysfunction may be further subdivided into those who are postmenopausal or premenopausal. DE's recommended uses in premenopausal individuals in whom the function of the ovaries has decreased ovarian reserve or weak reaction to regulated ovarian stimulation during earlier IVF cycles. Patients will usually have one or more of the following: eggs of poor quality, fewer oocytes recovered, and/or a high number of IVF/ET cycle cancellations. Research has confirmed that the age of the oocyte has the greatest effect on fertility. The most typical cause of ovarian reserve decline is age, the primary (47%) reasons for using DE as per the SART Society of Assisted Reproductive Technology 2010 dataset, which has not changed much since 2003. Women whose ovaries are frequently After successive failures, functioning will use oocyte donation to produce multiple mature controlled ovarian stimulation in oocytes (COH) throughout IVF attempts. Such Women who have poor ovarian health are referred to as those who reply. Constantly utilizing their own eggs may raise their

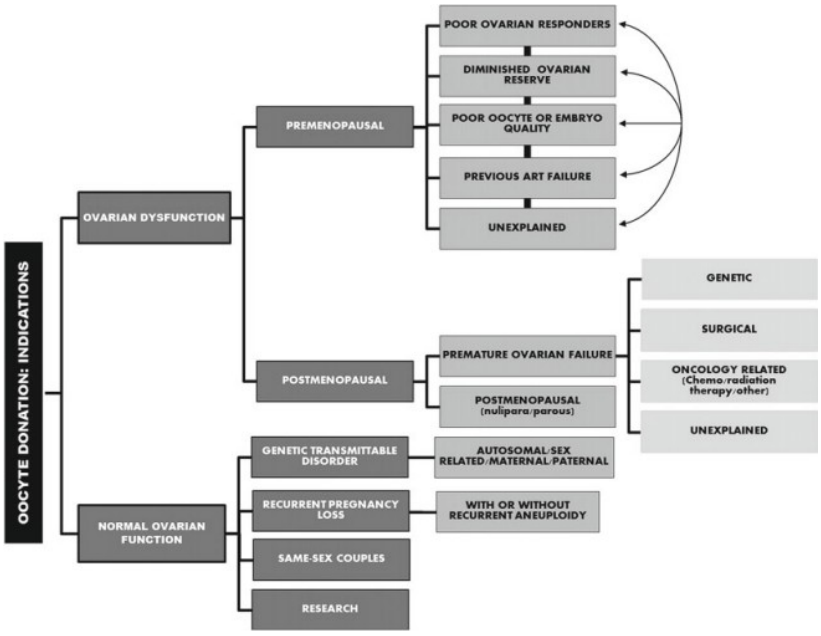

Fig. 1.1 Indications for the use of donor oocyte

chance of miscarriage and will undoubtedly significantly increase the number of IVF cycle cancellations brought on by a poor reaction to COH.

Primary or secondary amenorrhea defines a postmenopausal state, which is characterized by symptoms of low estrogen and an increase in gonadotropin serum concentrations. Moreover, menopause is classified as either premature or age-appropriate depending on whether the patient's ovarian function stopped before or after turning 40.

GUIDANCE AND STANDARDIZATION

Since its inception, oocyte donation has been a contentious topic with significant
socio-medical-economic ramifications for all parties involved. In contrast to programs that use autologous oocytes, egg donor programs involve the donation of a portion of the genetic pool, or the entire pool if donor sperm and/or oocytes are also used. The recipient, partners, children, the medical team, and the family, to name a few, all play significant roles in these programs. Adequate screening and counselling by a team of fertility specialists using a holistic approach—including reproductive endocrinologists, mental health specialists, nurses,

and embryologists—is essential for a reproductive DE program to be successful in recruiting donors and recipients. [3]

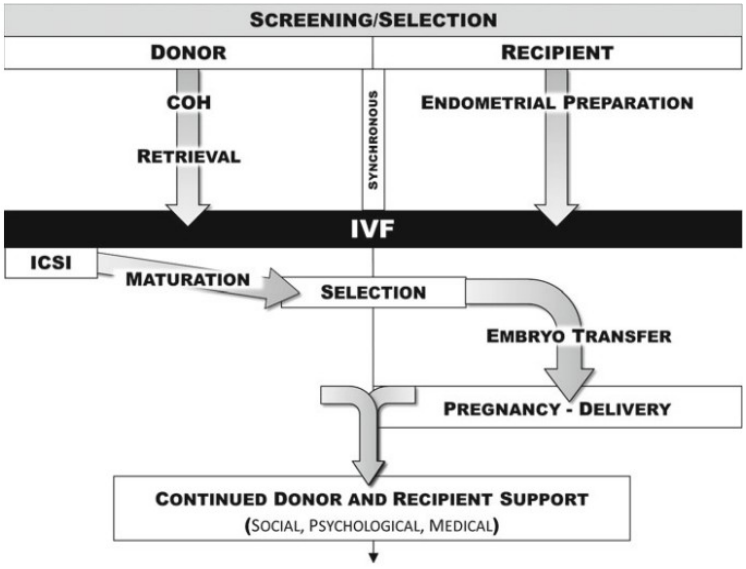

Fig. 1.2 Components of the donor oocyte process

INFORMED CONSENT, DATA PRIVACY AND STORAGE

Like any other medical procedure, oocyte donation involves risks, and patients must be fully informed about all the procedures, selection criteria, medical workups prior to and following the procedure, medications, side effects, short- and long-term associated risks, potential complications, and realistic, and institution-specific outcomes before undergoing the procedure. Oocyte donation is a complicated process, so the large amount of information should be presented in a step-by-step manner. Donor program records shall be kept confidential as stipulated in contractual agreements, in accordance with participant specifications about future information release and anonymity. Any medical information disclosed should be sensitive to local, ethical, religious, and personal beliefs as well as adhere to strict medical guidelines and the laws of the countries involved. [4]

CANDIDATE SELECTION AND SCREENING

Receivers should first have their medical and reproductive histories obtained as part of the evaluation process, with an emphasis on identifying any abnormalities that may need further testing in the reproductive system. Both the partner and the recipient should receive ongoing support and psychological screening. The recipient should then have a full pelvic examination. Prior to Embryo transfer it is generally advised that the uterine cavity be evaluated using hysteron salpingo-graphy (HSG) to detect any uterine abnormalities. [5]

OVARIAN STIMULATION AND RETRIVAL OF DONOR OOCYTES

COH is performed on oocyte donors in a manner akin to that of traditional IVF. Unlike the single egg produced during a natural menstrual cycle, gonadotropins, also known as "fertility shots," stimulate the ovaries to produce multiple mature eggs. In order to avoid an endogenous LH surge that would cause the eggs to be released from the ovary prior to egg retrieval, all stimulation protocols also adhere to the principle of pituitary gland downregulation. A GnRH agonist or hCG, an LH replacement, may be used to induce the eggs' final stages of maturation. If the goal is to transfer fresh embryos, the recipient's endometrium must be stimulated at the same time as this precise sequence of events to make it receptive to embryos. [5]

THE LEGAL LANDSCAPE

A woman who gives her genetic material to another, usually for reproductive purposes, is known as an egg donor. The donor gives up any claim to the eggs at the time of donation and states that she has no intention of becoming a parent to any offspring. A woman who donates her eggs for her own reproductive needs and who plans to raise the resulting child should never be referred to as a donor because the term "donor" has very specific legal meanings. [6]

The rationale behind the shared legal and policy development in gamete donation can be found by examining the similarities between sperm and egg donation for example, the idea of anonymity in egg donation is similar to the standard model for sperm donation. The use of sperm donation may have made it easier for intended parents who are not related to each other to accept the idea of using genetic material from a third party to conceive a child. Whether or not donor sperm or eggs are donated, there are important (and contentious) disclosure issues to consider, such as when and how best to disclose the use of donor gametes to a donor conceived child. The state laws pertaining to donor sperm vary, despite the fact that these laws can serve as models for laws governing egg donation. [7]

AREAS OF DISCUSSION FOR THE INTENDED PARENT PARTICIPANT

1. Financial obligations and specific costs— what the patient is expected to pay, what those charges are for, and when they are to be paid
2. Information regarding treatment options not available from the current provider

3. Disclosure of the federal reporting requirements and release of information about the patient to the report (non-identifying)
4. Information about nonmedical options [8]

SURROGACY- Gestational Carrier

A gestational carrier is a woman bearing a child that is not her genetic relative. In order to give a couple or individual who is unable to carry a pregnancy a genetically linked child, the gestational carrier gets pregnant. It's crucial to differentiate gestational, those who work in "traditional surrogacy." In "traditional surrogacy," a woman gets inseminated with sperm and carries a genetically her kid; in contrast, a gestational carrier bears a child with whom she has no genetic tie.

HISTORY

April 1986 saw the first birth using a gestational carrier. The original parents struggled with infertility for a very long time. Due to ectopic pregnancies, the woman had lost both of her fallopian tubes. The couple tried in IVF at Bourn Hall in England in 1981. Bourn Hall had the most IVF experience in the world at the time. The couple did use Bourn Hall's IVF to conceive. However, the wife's uterus burst at roughly 22 weeks of pregnancy. The baby passed away as a result of the uterine rupture, and the lady had to have a hysterectomy. The husband, a cardiologist in New Jersey, became aware that his wife's eggs and his sperm could clearly conceive a child. He and his spouse asked a number of fertility clinics that were then offering effective in vitro fertilization (IVF) in 1984 if it would be possible to create embryos by implanting their sperm and eggs into the uterus of another woman.The concept was thought to be both very interesting and demanding by the doctors at Cleveland, Ohio's Mount Sinai Medical Center. [9]

INDICATIONS FOR USE OF GESTATIONAL CARRIERS

Women who lack a uterus due to a hysterectomy or who were born without one are the traditional candidates for using a gestational carrier. Undoubtedly, using a gestational carrier helps some women with abnormal uteruses (whether congenital or acquired). However, a complete investigation for other issues that might be limiting conception or causing miscarriages is necessary, particularly if the anomaly is not extensive. [10]

GESTATIONAL CARRIER INDICATIONS	
1	Absent Uterus
2	Congenital
3	Surgical
4	Abnormal Uterus
5	Medical Disease
6	Failed IVF
7	Poor OB history

With further experience, however, it appears that some women who have had several unsuccessful IVF rounds may benefit from using a gestational carrier. For example, we recently saw a couple who had five unsuccessful IVF rounds despite using reputable programs and having high-quality embryos to transfer. The woman later became pregnant twice while enrolled in our program; however, the first scan revealed a slow heartbeat on both occasions, she miscarried soon after. [11]

SCREENING THE GESTATIONAL CARRIER

The gestational carrier and her family must be fully at ease with the risks involved with the process, just as the biological parents. The gestational carrier in particular needs to be informed of and at ease with the dangers associated with multiple pregnancies, particularly if more than one embryo transfer is intended. A single embryo can split, producing identical twins, thus even with a single transfer, there is a roughly 1% possibility of having twins. This is something the gestational carrier should be aware of. The gestational carrier must have experienced a healthy pregnancy in the past. This is significant for psychological as well as medical/obstetrical reasons. The attachment and bonding that happen during pregnancy are unknown to a woman who has never been pregnant before. Additionally, the gestational carrier needs to receive psychiatric treatment from professionals who understand the problems associated with third-party reproduction. Obstetrically speaking, women with a high number of deliveries are more likely to experience difficulties. Therefore, the ASRM advises that the gestational carrier should have had no more than three cesarean section deliveries and no more than five deliveries over all. [12]

Necessary Talking Points for the Biological Parents and Surrogate

The gestational carrier and the biological parents need to talk about a few important matters. The gestational carrier and the biological parents must have the same responses, even if there are no "right" or "wrong" answers to these questions. The following concerns should be brought up by the clinician with the gestational carrier and the biological parents:

1. How many embryos will be transferred? Many gestational carriers may be worried about multiple pregnancies because many of them had healthy singleton pregnancies. It is wise to advise transferring just one embryo to the gestational carrier, particularly if the biological mother is young. It is crucial that the gestational carrier feels

comfortable transferring more than one embryo after being properly informed of the hazards associated with multiple pregnancies, should the biological parents desire to transfer more than one embryo for any reason.
Fetal decrease that is specific. The gestational carrier and the biological parents must agree on whether selective reduction will be carried out in the event of multiple pregnancies. Most frequently, this would happen when an embryo "splits," producing identical twins. An example of this would be if two transferred embryos implanted, one of them separates, and the result is a triplet pregnancy.
Genetic testing and the reaction to a positive result. Nowadays, it's advised that pregnant women of all ages think about getting anatomical and genetic screening. Whether or not this screening is carried out is up to the gestational carrier and biological parents to decide. Additionally, they have to agree on whether the pregnancy would end if substantial anatomical or genetic problems were discovered. In addition to being discussed, the aforementioned concerns need to be included in the agreement made between the gestational carrier and the biological parents. [13]

GESTATIONAL CARRIER COMBINED WITH EGG DONATION

Over 40% of gestational carrier cycles in 2010 included the use of donor eggs, according to the SART database. This scenario would occur if the infertile couple's wife needed to use a gestational carrier for medical reasons but was unable to produce enough eggs to become pregnant. As a result, the gestational carrier would be carrying a child who is genetically half the husband of the infertile couple and half the egg donor. Men who are single or in same-sex relationships also use gestational carriers in conjunction with egg donation. A couple who is infertile but does not have working sperm or eggs seldom needs to employ a gestational carrier.

GESTATIONAL SURROGACY CASE LAW

Just five years after the first child born via gestational surrogacy, in 1990, a disagreement arose between the intended parents and their gestational carrier. The decision was challenged in court and the California Supreme Court took up the case in 1993. The court there asked three questions:

1. According to California law, who is the “natural mother” of the offspring when the commissioning couple each contributes genetic material for the creation of an embryo that is then put into another woman for gestation?
Does the decision that the intended mother and the egg provider are the "natural" mother affect the gestational carrier's constitutional rights?
Is this finding in contravention of California public policy? [14]

A gestational surrogacy case that started in Indiana resulted in an intriguing junction of the laws of four states when Surrogate Mothers Inc. linked Danielle Bimber (PA), the surrogate, with James Flynn (OH), the intended and genetic father, and his partner, Eileen Don ich. The donor, Jennifer Rice (T), provided the eggs used to generate the Embryo. Danielle and James signed a legal agreement, and when James' sperm and Jennifer's donated eggs were transferred, Danielle got pregnant. She gave birth to triplets in Pennsylvania. Presumably because she felt James and Eileen were unfit parents, she requested that the triplets be released from the hospital. Ohio acknowledged Jennifer's status as a genetic parent after James requested that she assert her parental rights as the biological mother. A lawsuit concerning parental rights was appealed to the Ohio Supreme Court during its last hearing. [15]

CONCLUSION

The way that families are formed has been permanently altered by art and outside participation. Despite being relatively young, egg donation has had numerous advancements to medical protocols and procedural alterations since it was initially implemented in the mid-1980s. Both the technology and the need for donors are expanding, and egg freezing is set to break down additional obstacles and give patients more options, convenience, and affordability. Although the law is sluggish to adapt to the quick changes in medical technology, practitioners' future plans may be influenced by the lessons learned from the past. It is important to remember that an informed consent is not a negotiation or a replacement for a contract between the parties to a surrogacy arrangement. The medical professional wants to help the intended parents become parents. In order to protect the rights and interests of the third-party collaborators, the legal practitioner aims to establish for those intended parents stable, unchangeable parental rights. The joint efforts of law and medicine create a desirable, legally recognized end point: a true family, not merely a child and potential parents.

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