Abstract

This article aims to describe the main aspects of human reproduction, both the methods of treatment used and other practices related to medically-assisted human reproduction. The article addresses the ethical and legal issues arising from the use of MAR techniques. We have analyzed the legislation of many EU member countries to determine the differences between their regulatory systems and the principles by which these countries are guided.

Keywords:

medically assisted human reproduction, artificial insemination, in vitro fertilization, surrogacy, post-mortem reproduction, genetic diagnosis, cryopreservation, ethical issues.

JEL Classification: I10, K10
INTRODUCTION

The medical scientific discoveries of recent years have led to unimaginable achievements in removing a defect that goes hand in hand with scientific progress - infertility.

Infertility is defined as the impossibility of a couple to conceive after a year of sexual intercourse without contraception. According to statistical data, 7.4 million women or about 11.9% were diagnosed as infertile, or 1 in 8 couples encounter difficulties in obtaining or sustaining a pregnancy.

Thus, over the past 20 years, new reproductive technologies have been developed that enable infertile couples to achieve a right and also a man's predestination on Terra-procreation through the use of assisted reproductive technologies.

The term procreation emerged after 1985 as a result of the application of new assisted reproductive techniques, which resulted in the emergence of new notions: gametes donor, carrier mother, substitute maternity, etc.

Medical assisted human reproduction is the set of techniques and practices that allow procreation outside the usual biological process by the intervention and indication of a third person, the physician. The reproductive techniques are used when the usual treatments for infertility have not produced any results.

Medically assisted human reproduction include several methods of realization: artificial insemination, in vitro fertilization, embryo transfer, micromanipulation techniques of gametes and even cloning.

The birth of the first child (Elisa Brown) through the RAM methods took place in 1978 in England, then in 1980 an identical event occurred in Australia, followed by America in 1981 and Russia in 198. There are currently more than 1 million children born using these methods.

Medical assisted human reproduction is also a reality in the Romanian society. In Romania, the first in vitro fertilization clinic was established in Timisoara in 1995, and in 1997 the first private assisted reproduction clinic in the country was established.

Their emergence gives rise to conflicts of a moral and legal nature, conflicts that need to be evaluated and diminished by the regulation of human assisted medical reproduction requiring a complex activity of re-adaptation of the already existing norms, inserting new provisions and imposing some limitations to ensure the integration of individuals arising
from MAR technologies that do not establish any privileges and more importantly do not allow any discrimination.

**MEDICALLY ASSISTED REPRODUCTION TECHNIQUES**

Medical-assisted reproductive techniques are those medical procedures through which collection, conservation, genetic diagnosis, embryo implantation, and embryonic reduction are carried out, if appropriate. MAR techniques are used when regular, hormonal, drug or surgical treatments have not produced any results.

**Artificial insemination** is the most commonly used technique. In the case of artificial insemination, the semen is treated, frozen and then transferred to the woman's vagina or uterus. Prior to using a donor's sperm, they will be required to perform all necessary medical tests, including genetic tests, to detect possible illnesses that could be transmitted to the fetus. In the event of certain diseases, the male will not be able to donate the sperm. We also need to mention that the treatment of sperm in the laboratory before insemination is absolutely mandatory for health and sanitary reasons.

**In vitro fertilization** is the reproductive technique consisting of conceiving a human embryo outside of the mother's body. Due to its complexity, in vitro fertilization is recommended for patients experiencing tubular prolongation, uterine tubal absence, endometriosis and micropolichy ovaries.

**Surrogacy** is erroneously considered a MAR technique. In fact, the medically-assisted reproductive technique used is artificial insemination or in vitro fertilization. Surrogacy is an agreement in which a woman agrees to carry a pregnancy for another person, who will become the newborn child's parent(s) after birth.

Depending on the genetic link between surrogate mother and child, we distinguish:

- gestational substitution
- traditional substitution

Gestational substitution exists in situations where there is no kinship relationship between the surrogate mother and the fetus.

Traditional substitution exists in situations where the surrogate mother is inseminated with the partner's sperm from both an infertile couple and sperm that can come from a donor. In this case, the carrier mother is genetically related to the fetus wearing it.
Depending on its financial nature, the surrogate can be classified in altruistic and commercial terms. The altruistic surrogate occurs when there are kinship or close friendships between the two women and it is not for financial reasons.

The US is one of the few countries in which commercial surrogacy is legalized, being illegal in Canada and most countries in Europe (Michelle Goldberg).

A contract that always complies with the surrogate terms and conditions is always concluded, but in the event of a conflict between the parties, the court may declare it invalid for reasons of public policy.

**Post-mortem reproduction** is the procedure that involves the birth of a child that occurs after the death of the donor's sexual gametes.

This type of reproduction was first encountered in 1980 in the case of a 30-year-old man who died in a road accident and whose sperm was previously cryoconserved (Rotham, 1980).

The most common situation is the woman's use of one of the MAR techniques using the deceased husband's cryopreserved genetic material. If the genetic material was taken and cryoconserved in advance, we are in the situation of the husband's consent for this procedure. From a legal point of view, the conceived child has all the rights of a child conceived during her husband's life.

The situation is different when there is no such expressed consent of the deceased husband. Normally, the common rules apply to legal time of conception but when due to the fact that fertilization took place with the gametes of the husband at the time he was already deceased, these rules can not be applied. The resulting child will be legally considered outside the marriage.

On the other hand, in the case of cryopreservation of the embryo, in which the fertilization took place at the time when both spouses were alive, the child will receive marital status.

Another situation emerges if the husband dies while the wife follows one of the medically assisted reproduction procedures, but before transferring the male embryo or male gamete to the womb of the woman. In this situation, some states allow the continuation of procedures, and others do not.

Post mortem reproduction creates a number of legal complications, and for this reason few are the countries that regulate and allow it.

**Genetic diagnosis** is the procedure whose purpose is to study the genetic patrimony of the embryo in order to identify possible health
problems that may arise. Preimplantation genetic diagnosis aims to detect the existence of genetic abnormalities or genetically transmitted diseases. Making this diagnosis creates lots of controversy, because through this procedure can be identified a number of genetic features of the future child, characteristics that can be selected by future parents, practices that can be classified as eugenic.

The possibility of performing these procedures for reasons other than medical ones and the impossibility of pursuing the purpose for which they were performed is the reason why genetic diagnosis is forbidden in many countries.

**Cryopreservation** is the process in which cells or even whole tissues are preserved at low temperatures, usually at -196°C, which is the boiling point of liquid nitrogen. The procedure is performed to stop any biological activity, including biochemical reactions that would inevitably lead to cell death.

Since 1970, the problem of embryos resulting from the in vitro fertilization procedure has been put in place, with a solution - their cryopreservation (Guțan).

Most times, the number of cryopreserved embryos exceeds the needs of the couple, putting the issue of creating a legal framework on who could make the decision to dispose of the remaining embryos.

To limit the possibility of conflicts occurring, fertilization clinics usually ask couples to sign a contract stating the consent and will of the couple about the fate of the remaining embryos. The options are: keeping, donating for scientific research, donating them to a couple or destroying. As a rule, these contracts also include clauses regarding the fate of couple's embryos in case of divorce, death, separation, or the impossibility of being contacted by the fertilization clinic.

The retention time of cryopreserved embryos is determined by the legislation of each country. Therefore, in the UK the legal retention period is 5 years, in Australia for 3 years, and France for 12 months, when it is written down and in the absence of any decisions by the legal owners, they are destroyed.

The cryopreservation of human embryos raises a number of legal issues, including: the status of the human embryo, the fate of cryopreserved embryos whose owners have died, and the order of children's parentage who were conceived during the same period, as a result of the same in vitro fertilization, but were born in different periods.
MEDICALLY ASSISTED HUMAN REPRODUCTION IN OTHER STATES (EU)

Although assisted medical reproduction has created high hopes for many people affected by infertility, it has also generated a surplus of ethical and social debates.

Assisted medical reproduction is certainly a new field in development, however, the issues of this, especially ethical and social, attract the interest of many EU Member States and not only.

The European legislation in the field of medically assisted human reproduction is slightly different in each country and not all European countries have a specific legislation.

These laws derive from different origins ranging from an extremely prohibitive legislation (eg, IT, DE, LT, and AT) versus a cautious regulatory approach in DK, SE, and FR and a liberal regulatory system in ES, GR, and NL (Busardo).

About the embryos that have remained extra after a IVF procedure, in some European countries they can be cryopreserved for a defined period, for example: 2 years (with possible extension to 5 years) in DK, 5 years in BE (with possible extension) and GR, 7 years in EE, 10 years in HU, LV, and SE. The German MAR law seeks to avoid the creation of surplus embryos and does not set specific rules on how to manage them, if such surplus occurs (Busardo).

Regarding research on human embryos, in those EU countries where it is allowed, they make a distinction between the production of embryos for research purposes and research on existing embryos. Most EU members allow research on existing embryos no longer suitable for implantation (BE, CZ, EE, FR, GR, HU, LV, LT, NE, PT, SK, SI, ES, and SE) and prohibit the creation of embryos specifically for research purposes. Among these countries, research on embryos for therapeutic purposes can be carried out up to 14 days of development.

When comparing MAR laws in the European Union the scenario that arises is far from being uniform, they have different regulatory systems and principles.

France regulated the field in 1994 through a law amending the Civil Code and the Public Health Code. A rather restrictive system has been promoted, allowing only heterosexual couple access as the ultimate therapeutic method. Embryo donation is allowed as an exception, only for married people, with embryos coming from another couple.
anonymity is promoted, the child being denied the right to know his or her identity. The surrogate is forbidden, the filiation in this case stabilizing according to the rules of common law.

**Switzerland** has a wider regulation, starting with the Constitution (art. 119), the Civil Code and the Special Law (1998). It has a more restrictive system than the French system, sperm donor techniques being allowed only for married couples. Donation of ova and embryos is prohibited. Although the law protects the donor, it does not guarantee the right to anonymity, the right to information and the knowledge of origin being superior. The future child will be able to access his case at the age of 18, but the donor cannot be contacted without his consent, by virtue of the right to privacy.

**Italy** passed the law in 2004, being very restrictive. Heterologous techniques are forbidden, and the use of genetic material that does not belong to the couple is not allowed. Access is only allowed for heterosexual couples. Children are born as relatives of blood with their parents, common rule of law is used for the establishment of parentage, and action to defer paternity is forbidden in this case.

**Germany** has restrictive regulations in the field of reproductive technology. Access to MAR techniques have heterosexual couples and only sperm donation is permitted. Consent is required, which has the effect of directly establishing the childhood affiliation. Embryos are considered to be human by the time they are conceived, they can only be created for reproduction purposes.

**Spain** is another member State with permissive legislation. In Spain, donation is made under anonymity, children designed to be natural. The surrogate is forbidden, but post-mortem reproduction is permitted.

In **Belgium**, human-assisted human reproduction is governed by two important laws: the Law on Assisted Reproduction and the Destination of Embryo Surplus (June 1, 2017) and the Law on In Vitro Embryo Research (2 May 2013). Belgium is another member state with permissive legislation.

The embryos that are the result of the IVF technique and have not been implanted can be cryopreserved for a period of 5 years, can be used in research, donated or destroyed.

Belgian law further stipulates that parents who have undergone MAR treatment conclude a convention with the clinic that has given them these services in which they will decide the fate of the non-implanted embryos and their fate in case of divorce or the death.
Post-mortem reproduction is allowed only if it occurs within a time frame: between 6 months and 2 years after the date of death of one of the parents. It should also be mentioned that Belgian legislation imposes a certain age limit, and exactly 45 years, for women who want to benefit from most of the MAR techniques, and implantation of embryos is allowed until the age of 47 years.

Embryo research is only allowed for the exclusion, prevention or treatment of genetically transmitted diseases.

CONCLUSION

Over the past 20 years the new reproductive technologies that have developed have become widely available for infertile couples who want to have a baby.

Since the first in vitro fertilization, the number of people who used MAR technologies have been growing faster and the number of procedures has been steadily rising. The first babies born with the help of in vitro fertilization are over 20 years old, and the retrospective analysis does not show any noticeable negative impact.

The scientific-medical methods of human reproduction and the possibility of intervention on human DNA provide a new vision of human life and being. The MAR techniques require a broader social, medical, legal and ethical approach to child rights, human genome security, and affiliation with the family.

Certainly, research in the field is advancing rapidly, methods of manipulating the human DNA and reproductive cells are spreading the phenomenon of the child created by genetic selection. As a result, the interests of the child goes to the second level, and its protection is no longer a subject to the principle of the best interests of the child.

This is the reason why the laws in the countries that regulate the field are inharmonic. In some countries, child protection is of superior interest, and in others the rights and freedoms of citizens are overriding. There are also states that try to avoid growing eugenic practices and the free use of genetic engineering to modify the human genome by tackling a severe restrictive policy, countries like Switzerland, Austria and Germany.

There are also states that do not have MAR regulations even if they have ratified international treaties in the field.

The general tendency of many states is to limit as much as possible the techniques that suppress genetic maternity and the principle "mater
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semper certa”. Regarding "fathers", it is easy to admit the use of genetic material from a donor, and some countries admit access to these techniques even for single women, but the idea that a single man resorting to assisted reproduction techniques for getting a child is unacceptable. We must mention that even in countries where same-sex marriage is permitted, and even adoption of children by these couples, couples of men are deprived of the possibility of benefiting from medically-assisted reproductive techniques.

REFERENCES:


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