The Legal Status of the Human Embryo in Test-Tube in Reproduction Process in Turkey*

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Abstract: *This paper discusses various medical interventions on embryos in test-tube created for the purpose of human reproduction, in terms of the rights and protection of the embryo in the context of human rights. The discussion spins around two main points. The first is that rules and measures in Turkish laws and regulations about embryos resulting from test-tube fertilisation do not ensure adequate protection for the embryo. The second is that some medical interventions on human embryos are rather disputable in legal terms since they have been carried out either on a loose legal basis or without fully complying with the regulations. The safety, health and well-being of the embryo as well as the parents are put in danger as a result. This paper examines the legal conditions of test-tube fertilisation, the creation of embryos as saviour siblings, tissue typing, genetic screening of embryos and embryo selection. It identifies the need for a new, sound legislation to protect the dignity and rights of the embryo in test-tube.*

Key Words: *Test-tube babies, saviour siblings, embryo selection, protection of the embryo.*

Issues such as creation of the embryo in the test-tube, placing it in the uterus, its exposure to intervention, discarding it, experimenting on it and creating clone human-being are directly related to the discussion on legal status of the embryo. Although the current regulations on the embryo in the test-tube are bench marks in the discussion of legal status, a discussion of moral status concerning whether an embryo is regarded as human-being or not with respect to human rights law also forms a determining point to evaluate legal and executive regulations. There are strong theoretical, legal and moral justifications revealing the possibility of structuralization of human embryo as a subject of right (see Çoban, 2007a). Nevertheless, the development of legal and executive regulations resembles the swinging of a pendulum. An extensive and limitless intervention on the embryo, on the one hand, is allowed as a parallel case to the advances in the fields of genetics and health and in a way that would lead up such advances; on the other hand, strict rules are laid down for the protection of the embryo in legal terms. This article aims to discuss the procedure of test-tube babies in terms of rights of the embryo depending on the regulations in force which have a two-way tendency. Such a discussion will reveal the legal status

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of the embryo in the test-tube which is a part of the fertilisation process. The discussion in the article has two hypothesises that complete each other. First, the current regulations and measures on the embryo in the test-tube are inefficient in terms of the protection of the embryo. Second, the embriyos in the test-tube are exposed to various interventions that have no legal basis either because of the gaps in the regulations or as a result of contradictions or in a way contrary to the provisions in the regulations.

The arguments of this research are not built on the insight that there can be no intervention on the embryo. There can be, and are, various bio-medical interventions on the human-being. What is important is that the interventions on the human-being should not violate human rights, which is the basic insight of the study. This can be sustained on the condition that interventions are carried out in accordance with a legal regulation quaranteeing the human rights, that they are justifiable, and that their legal provisions are definite and clear-cut. Despite the ambiguity and contradictions they involve, it is possible, on the other hand, to read and interpret the positive legal regulations concerning the status of the embryo in a different sense. It is not necessary to interpret the regulations in force and to assign a status to the embryo according to the interests and points of view of biotechnology companies, universities, governments, center for test-tube babies and genetic diagnosis, reserachers, patients, patient relatives, prospective mothers and fathers, etc. A part of the rules in force can be considered as building blocks of the status which clearly or implicitly protects the rights and dignity of the embryo. The starting point of this research is to bring about a discussion about the thought asserting that a different world where the rights of an embryo are protected is morally necessary and legally possible.

Not only the legal status of the embryo in the test-tube, but also of the one in mother's uterus is exposed to contradictions in Turkey (see Çoban, 2007b). While the regulations for the embryo in the uterus are contradictory, we cannot expect more sound legal provisions for the embryo in the test-tube. This can be attributed to three reasons.

First, it can result from the possible effects of the conception of the embryo on the law. The embryo in the test-tube can be regarded or introduced, rather than a human-being, as a techno-entity, a 'bunch of cells', an 'artificial' living thing, a 'biproduct' of the artificial fertilisation process, a 'milestone' of having babies and a biological 'testing material' of a researcher. The embryo in the test-tube is considered a human-made part of a machine, leading to a thought that any intervention on this 'product' is allowed leaving it deprived of the legal protection. This consideration, as the core element causing the difference between the embryo in the uterus and the test-tube in terms of rights, depends on an argument asserting the purpose of creating the embryo. Thus, the embryo which has completed its conception in the uterus in the 'natural' way for fertilisation is regarded as human-being, but the embryo, for instance, created for experimental purposes is considered as an experimental material. On the other hand, despite the fact that the embryos created technologically in an 'artificial' way for fertilisation conforms to the purposive element, which ones should we explain with the purpose of creation: all of the embryos, or only the ones placed in the uterus, or the ones that were born? Therefore, regarding the embryo as a 'means' for realising a purpose takes us to another deadlock.

The second reason is that a living-thing, whose fate is sealed by placing the one-week or ten-days old embryo into the uterus, by freezing or discarding it, and which has not yet had the form of a human-being with its organs and brain in a distinguishable way lays the grounds for such thoughts. Reflection of this in the legal regulations can be a more loose protection compared to the embryo in the mother's uterus. This can be an explanation to the fact that a one-week old embryo in the test-tube is pale in comparison to the ten-week old embryo which is a subject to abortion. Still, the ten-week embryo which is capable of rights cannot take the form of a human-being in the uterus and a fish in the test-tube. A fourteen-day, a ten-week and a nine-months and ten-days old entity cannot turn into a completely different entity in the fifteenth day, eleventh week and ninth month and fifteenth day. If we attempted to determine the legal protection according to the time consumed in the development process, we would ignore the historical continuity in the development of humanity.

The third reason can be related to the legal terminology. According to the Turkish Civil Code (article 28), the right of capacity is possessed at the very moment the child enters the mother's uterus provided that he/she is born alive. Accordingly, a structuralist interpretation should argue that only the embryo in the uterus has the right of capacity. Inevitably, it should be said that the embryo has not the right of capacity as long as it is in the test-tube. Contrary to this aspect, an interpretation that takes the essence of the matter into consideration should stress that the terminology of entering the mother's uterus would mean fertilisation of ovum by sperm[1]. In this case, we can say that all rights for the embryo in the uterus are valid for the embryo in the test-tube either. The fact that the right of capacity is acquired at the very moment of entering the mother's uterus in Turkey shows that it is approved in our legal system that life of a human-being who is capable of rights begins with the fertilization moment in which the embryo comes into existence (Çoban, 2007b). If the human life which is legally protected begins with fertilisation, then the embryo in the test-tube is equally capable of the rights. If the rights of an embryo in the mother's uterus are under legal protection, a ten-days-old embryo is equipped with the same

[1] For instance, The Embryo Protection Act in Germany regards the fertilised ovum as embryo begining from the moment of fertilisation and it takes the embryo under protection (Lilie, 2005: 113; Rosenau, 2005: 138).

protection. The embryo created in the test-tube is not a different entity when it is placed in the mother's uterus, or when the uterus accepts the embryo. The matter is not the place of the embryo –whether it is in the uterus, artificial uterus or a laboratory container. It is neither a problem of creation purpose nor time. The problem is whether the legal system regards the human embryo as a member of the humanity or not.

TEST-TUBE BABY

Embryos in the test-tube, are formed through artificial fertilisation for reproduction. The basic regulation on the legal status of the embryos created for reproduction is the Guideline for Assisted-Reprodcution Treatment (ART) Centers[2]. Within the scope of the guideline, embryos are created and placed in the mother's uterus so as to ensure the married couples who are incompetent to have children to do so. Such a process through which embryos are created can only be conducted in the ART centers which are established by the permission of The Ministry of Health. The guideline includes a crucial restriction on using embryos, permitted by the guideline itself to be created in test-tube, for any purposes other than for reproduction (e.g. for research or an experiment). It is stated in the guideline as follows:

> 'it is forbidden to use the ovums and sperms acquired from the future mothers and fathers as well as the embryos for other purposes and other prospective mothers and fathers; to use and apply the ovums and sperms of those who do not expect children for prospective mothers and fathers; and to keep, use, transfer, sell ovums and sperms for any purpose with the exception of indicated in this guideline' (ART Guideline, Article 17).

Activities and applications of the centers that violate any provision of the guideline shall be ceased. The executive sanctions for those who violate the provisions of the guideline consist of suspention of activities up to six months, cancellation of licence and work permit.

There are further serious legal issues beyond suspention of the activities of a center acting illegally. According to the official data of August 2008 announced on the website of The Ministry of Health, General Directorate for Treatment Services, there are 104 licenced ART centers in Turkey. According to the official response on my request of information by The Ministry of Health (document dated 16.6.2008 and numbered 22692), the total number of the embryos created and placed in the uterus by ART centers is 21.881 only in the year 2005. The ministry does have the information about the embryos placed in the mothers' uterus, while it has no records of how many embryos were created and how many of them were discarded. According to another source, 40.000 test-tube babies were born in Turkey since 1989, while the number of test-tube baby interventions figured 40.000 only in 2007, and of these interventions 6.000 test-tube babies were born (Akyol, 2008). Considering that five embryos were created at each trial, 200.000 embryos must have been created per year. Considering the size of the application, reestablishment of the legal basis for the legal relationship of the child with his/her parents in the prenatal period and legal regulation for the protection of the embryo is necessary without any doubt.

Test-tube baby application is also important as it indicates the deadlock of the aspects which regards the 'live birth' as the determining point for fundamental rights. In brief, we should seek an answer to the following question: Is the embryo in the test-tube the property of the parents, or a rightful member of the family of humanity, or does it become a member of humanity when it is placed in the mother's uterus? There is not a self-answering, non-controversial, clear and consistent legal regulation or case law on the issue in Turkey. This is, at the same time, an issue related to removing the legal ambiguity of the rights of the child in the prenatal period.

Creating embryo depends on four conditions within the framework of the ART Guideline. The couple must be married; the sperms and the ovums must belong to themselves; they must certify that they have not applied for any other method to have children; and both the woman and her husband must consent to the application in written form. Unmarried couples, women and men living alone, married couples who want to have children by means of donated sperms and/or ovums or a received (donated)[3] embryo cannot benefit from the ART procdure. There is not an upper limit for the number of embryos for each ART procedure in the guideline. On the contrary, the number of embryos to be placed in the mother's uterus is at most three. The transfer of more than three embryos into the mother's uterus is permitted due to medical reasons such as age of the women and the quality of the embryo.

Now that there is not a restriction on creating more embryos than the required number of embryos to be placed in the uterus, residual embryos are expected to remain. According to the guideline, the residual embryos can be stored frozen for five years upon consent of the woman and the husband (The storage time was determined as three years previously). In the 'declaration of consent' form, the appendix of the guideline, while the couples approve the ART procedure, they are asked beforehand to be consent to the embryos being frozen. The

[2] The guideline published in the Official Journal dated 21.8.1987 and numbered 19551 was revised on various dates for five times. The last revision was published in the Official Journal dated 8.7.2005 and numbered 25869. See the Guideline for Assisted-Reproduction Treatment (ART) Centers, 2005 for the revisions on the current provisions.

[3] In France, in relation to the 'embryo donation', the word 'accueil' (*reception*) is used instead of 'don' (*donation*) because donation involves the meanings possession and property (Steering Committee on Bioethics, 2003: 21).

embryos can be transferred into the same woman's uterus with the consent of the couples within a period of five years. The embryos whose conditions of use are legally spoiled (if the couple want the embryo to be discarded; if one of the partners dies or divorces) within the storage time, or whose five-year storage time expires shall be immediately discarded (Article 17). There is not a clear provision in the guideline on the residual embryos that are not transferred into the mother's uterus and not wanted to be frozen by the couple. Conforming to the provision asserting that the embryo created for test-tube baby cannot be used for any other purpose, it can be concluded that the residual embryos shall be discarded. There is not a clear-cut regulation on what shall be done with the embryos which undergoes problems during the formation process, or which are not convenient to be transferred due to medical, sanitary or genetic reasons (in case of 'diagnosis of a genetic/hereditary sickness' for instance); when it is irrational for the embryo to be stored frozen within the same framework; and when it is technically impossible to use the alive or dead embryos. It is possible to say that the prohibition of keeping, using, transferring and selling embryo for purposes other than reproduction should also be applied in this case and that the embryo should be discarded. According to ART Guideline (Article 17), data on the embryos which are used, kept or discarded should be registered and submitted to the ministry. Yet, according to the official document (dated 16.06.2008 and numbered 22692) sent by the ministry upon my request, there is not any information about the number of embryos discarded because it was not placed in the uterus, even though it was produced in the centers, and because it was unnecessary keep them frozen. There is not information in the document about the number of frozen stored embryos, currently being stored embryos, and embryos discareded after freezing.

In the ART guideline, it is not indicated in how many days, at most, the embryos should be placed in the prospective mother's uterus after formation. It can be asserted that it is unnecessary to set a regulation on the issue because there is a medical time span that is known to the experts and applied in the process; or indicating a period of time is against the grain of the process. Moreover, there can be cases in which the expert postpones transferring the embryo into the uterus or schedules it to an earlier time in order to draw comparative conclusions from the back-to-back scientific and experimental research, publishing, etc. Apart from the possible danger to the embryo and the prospective mother's health, in such cases caused by uncertainity of time, an illegal situation may also occur against the guideline which depends on the purpose of the treatment. Similarly, it is also not indicated how long the residual embryos, which are not necessary anymore to be transferred into the uterus, can be kept before storing frozen, or discarding if they will not be stored. It can be argued that there is no need to suspect if all embryos are transferred into the uterus within medically

appropriate time, kept frozen or discarded in a 'reasonable' period of time[4] at the ART centers. Still, this argument cannot fill the legal gap resulting from the fact that on the one hand the frozen embryos are judged to be immediately discarded if their time for storing has expired; the time, on the other hand, for embryos to be transferred into the uterus, frozen or discarded is not determined in the guideline.

SAVIOUR SIBLINGS

In recent years, there have been many examples of creating test-tube embryos as 'saviour siblings' in Turkey[5]. In saviour sibling practices, which aims at treating brother/sister who has a hereditary blood disease, first embryos are created in the test-tube through artificial fertilisation. Next, the samples of cells extracted from the embryos are subjected to genetic screening and the embryos which have not any indication of any hereditary disesase as well as the ones with the highest level of tissue compatibility with the sibling to be treated are selected. One of the selected embryos, in some cases two or three, is placed in the mother's uterus. Just after the child-birth, the cord blood of the baby is collected so as to be used in the stem cell treatment of the sibling. Now that creation of embryo through artificial fertilisation is carried out in the ART centers and legislative framework for the medical practices in the centers is determined by the ART Guideline, it can be said that the test-tube embryos designed as saviour siblings are created in accordance with this guideline. In fact, the step of creating test-tube embryos in saviour sibling practices is conducted in centers/units which are in compliance with the guideline.

Under these circumstances, a crucial legal issue with regard to the 'purpose' of the treatment comes out at this very point. The aim of the ART centers is 'to ensure the married couples, who are incompetent to have children, to have children by means of proper medical treatment methods' (ART Guideline, article 1). I have just emphasized as one of the conditions to create embryos in these centers that couples cannot have children using methods other than the ART

[4] For instance, as Mesude Erşan reported (2007: 7), 'the embryo is placed in the uterus in the fourth, at most fifth day'. Again according to the interview by Mesude Erşan with a popular expert on test-tube baby practices (2006: 7), 'placement of embryos into mother's uterus lasts for nearly 2 weeks'.

[5] These are often seen in cases of Mediterranean anemia: as in the examples such as Dicle and her sick elder brother Fırat (Arena TV Programme, Kanal D and CNNTürk television channels, various dates in 2004); Alara and her sick elder brother Mert (Sancar, 2006); Metin and his sick elder sister Zeynep (Özüm and Kahraman, 2007), Sinan Umut and his sick elder sister Dilara (Yenigün, 2007), Yağmur and her sick elder sister Aleyna (Coşkun, 2009), Daniele and his sick elder sister Emily, children of an Italian couple, who received treatment in Turkey due to the fact that such treatment is prohibited in their country (Erşan, 2006). In another case reflected in the media, test-tube baby treatment was practiced for a brother whose sickness was Adrenoleukodystrophy (Aktaş, 2007). It was indicated that successful results were achieved, in the cases with Maditerranean anemia in particular, four patients, for instance, could maintain their lives healthfully thanks to the cord blood collected from their sibling (Beksaç, 2007: 6).

methods[6]. There are three possibilities in this case[6]. First, for the practice of creating embryos in test-tube for the treatment of a sibling to be complying with the guideline, the couple who becomes prospective parents must certify with a document that they cannot anymore have children by means of other methods. Second, since the aim of saviour sibling practice is not fertilisation, there might be cases of creating embryos in the test-tube without seeking any document. Nevertheless, this shall be interpreted as violation of the rule in force since it does not fulfill the condition of documenting the guideline requires. Third, since the purpose of the treatment is not fertilisation, it is irrational to apply the ART Guideline to the saviour sibling process. This means that the center/unit established, licenced and supervised according to the guideline acts out of its purpose and against the provisions of the guideline. Thus, in order to mention the legal conformity of creating embryos as saviour siblings, either the document proving that the couple could not have children using different methods should be prepared, or the embryos should be created in a unit which is not established as an ART center, thereby it is not conforming to the guideline, but could legally act.

The aim of the ART practice is reproduction, while the aim of saviour sibling practice is to enable the sick brother/sister to be treated[7]. With its gaps which I mentioned above, a framework regulating the creation and the use of the embryos exists. Nevertheless, there is not any regulation about the creation and the use of the embryos as saviour siblings in cases where it is possible to get pregnant using different methods other than the ART methods. Possible questions on such a regulation could be as follows: Will it be permitted to create a human-being for the treatment of another one who needs cord blood? Will it be only true for the treatment of the brother/sister, or will it be a general application for other people who have high tissue compatibility?[8] How will the saviour sibling be prevented from being a means of the patient, and what kind of restrictions will be laid down on this issue? Will the creation of an embryo as a saviour sibling be permitted for certain diseases or as a general treatment? Does the saviour sibling have the right to know that he/she is the saviour, and does

[6] In the report in Vatan Newpaper (Özcan, 2006), the explanation of the doctor who carried out ART process on a mother whose 'children were dead for two times due to "myotubular myopathy"' is interesting. Asserting that it was impossible for the woman to get pregnant in natural ways, the doctor says, "the mother's previous birthings were normal. She did not have any problem with getting pregnant. So, we deciphered the genetic code of the 9 embryos created out of the ovums and sperms collected from the mother and the father. 6 of these embryos were sick and 3 were healthy. We transferred 3 healthy embryos into the mother's uterus."

[7] For instance, Alara and Mert's mother says, "All I wanted was to save my son's life" (Sancar, 2006); Metin and Zeynep's father says, "As a matter of fact, we decided to have the second baby so as to save our daughter" (Özüm and Kahraman, 2007). The two cases emphasize the purpose of the saviour sibling.

[8] For instance, in the UK where the rules for genetic practices and research studies are very loose, the practice of embryo selection as a saviour sibling was not allowed in the cases where the child to be born would not have any medical benefit (Çoban, 2004: 239). The related authority amended the regulation and allowed the selection of the most appropriate embryos by a genetic screening in order to save the sick sister or brother (BBC News, 2004).

the saved sibling have the right to know that he/she is saved? If the answer to this question is "yes", then who will inform the sibling (saviour or saved) about this and at what age will he/she be informed? Until that time, will the saviour and/or the saved person be ensured by the provision that he/she is/are not to be informed about the practice? Or will the saved brother/sister be ensured to be informed about the practice at one of the steps of the practice, for instance before the transferring of the stem cells acquired from the cord blood?

Answering such and such questions is crucial to be regarded as valid rules within the legal order because the procedures are more different than writing a prescription; creating a new member of the humanity depends on consent and preferences. The procedures of savior sibling, even though seem to end with the collection of the cord blood, the possible legal problems in the post-natal period are of great importance. It is beneficial to resolve the legal ambiguity related to artificial fertilisation for saviour sibling, the selection of the appropriate embryo and placing it in the mother's uterus, and the birth and the post-natal period. In addition to the question of the sibling designed as a savior, i.e. legal problems deriving from instrumentalization of a human-being, we should take into consideration the problems that could arise in the communication of the two person (savior and saved) with other people in the society.

EMBRYO SELECTION

The stage after the creation of embryos in test-tube as saviour siblings is the screening stage when the most appropriate embryo is selected. As a matter of fact, in any case of the test-tube baby practice, the most appropriate embryo to be placed in the mother's uterus is selected. In the ART Guideline, there is not any rule about whether any genetic screening could be made or not on the test-tube embryos created for reproduction. Two different guidelines in force, the Guideline for Diagnosis and Treatment Centers for Genetic Diseases and the Guideline for Control Program for the Hereditary Blood Disease Haemoglobinopathy and Diagnosis and Treatment Centers have set forth some general provisions. The two guidelines, in fact, regulate the basis and procedures about the centers where the genetic screening to be held. The prenatal diagnosis for genetic/hereditary diseases is obtained in these centers. In both guidelines, there is not any distinction between the embryo in the uterus and in the test-tube in terms of prenatal diagnosis. That is, in such an atmosphere of legal gaps, the genetic screening which aims to reveal if the embryo, in the uterus or test-tube, was affected by a genetic disease can be conducted in the centers established in accordance with the two guidelines.

Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, to which Turkey is a party, conditionally per-

mits applying genetic tests in some cases. Tests which are predictive of genetic diseases or which serve either to identify the subject as a carrier of a gene responsible for a disease or to detect a genetic predisposition or susceptibility to a disease may be performed only for health purposes or for scientific research linked to health purposes, and subject to appropriate genetic counselling (Article 12). According to the Explanatory Report written for the provisions of the convention to be understood, this article allows these tests at the embryonic stage to find out whether an embryo carries hereditary traits that will lead to serious diseases in the future child (Explanatory Report to the Convention on Human Rights and Biomedicine, 1996: paragraph 83). This article provides a legal basis for genetic tests on embryos in the uterus or the test-tube in Turkey.

According to the provisions in force, centers for genetic diagnosis carry out the genetic screening using 'various methods other than the invasive methods'. The invasive methods (amniocentesis process and chorionic villus sampling (CVS) process), on the other hand, such as injection into the mother's stomach and entering the uterus with needles are realized in the prenatal diagnosis units of the haemoglobinopathy diagnosis centers. As the process of inserting a needle into the test-tube embryo and collecting cell samples is conducted in the centers for genetic diagnosis, this process must be regarded as a non-invasive method in practice. Whereas, it is clear that there is an intervention into the unity of the embryo, thereby the process can be interpreted as an invasive method. With respect to this interpretation, the genetic diagnosis centers that carry out the process should act illegally against the provisions of the guideline.

According to the Guideline for Diagnosis Centers for Genetic Diseases (GD Guideline in abbreviation), genetic diagnosis centers are established for the prenatal and/or postnatal diagnosis of genetic diseases in order for enabling the diagnosis and thereby the treatment of genetic diseases before the individual is born (Article 1). Although the diagnosis aims at treatment in this statement, the suggested solution in general terms is abortion in case a possibility of prenatal genetic disease appears. It is such that in the Regulation for Uterine Evacuation (1983), not only the names of some disesases were included in the list of diseases requiring abortion for genetic reasons, but also a general statement as 'other hereditary diseases that could quite possibly cause birth of disabled children' was added. In the cases the regulation foresees, because abortion is in question due to the disease, the restriction of ten-week-period is not expected. In fact, the prenatal 'diagnosis of genetic disease' cannot be equal to 'treatment of the disease' since the diagnosed diseases might not have a treatment. In this respect, 'diagnosis' lays the grounds for abortion if the embryo is in the uterus, and for the decision of unability to be selected or to be eradicated if it is in the test-tube.

Although the guideline enables performing a test that might determine the decision of eradication of the embryo, in such a vital issue, it does not include

any provision pertaining in terms of which certain diseases the genetic test should be performed. In the centers, according to GD Guideline, any 'genetic disease shall be diagnosed' even if it is not mentioned in the guideline. The name of the genetic disease, which will be searched if the child to be born might have or not, shall be written in the empty space in the declaration of consent form which will be signed by the prospective mother before the test procedures of the embryo. Diseases that derive from genetic problems (e.g. see İnce, 2007 for the finding that, contrary to the dogma that cancer is a genetic disease, cell connection of the genetic mutations is essential) and the relationship of diseases with the interaction of gene-organism-environment (e.g. see Çoban, 2008: 75-76; Bowring, 2003: 145-170) are issues for an intense academic discussion. While this is the case, a vast field of research has been created for diagnosis centers in the guideline without introducing any restrictions and any framework that defines and lists the diseases, which forms a problem for the protection of the embryo and the prospective mother and father in legal terms[9].

It is difficult to overlook the tragicomic issue in which the patient is discarded rather than treating the disease. Since the tests are carried out for genetic/hereditary diseases in general without any restriction or listing, it is preferred to discard the embryo in the uterus or the test-tube even in the case of treatable diseases. Moreover, the test results obtained for some diseases only indicate genetic predisposition or the possibility of the disease. Even if the predisposition is detected, the disease may not develop for many reasons. For instance, can any legal aspect explain ending a woman's life that has shown predisposition to breast cancer in the genetic test results within the framework of fighting?

There are two possible solutions to the problem. The clarity on genetic diseases that will be a subject to research can be provided with a law. In this case, diseases can be listed in a list. This way provides a more strict protection compared to the second one. As for the second way, as in the case of Human Fertilasation and Embryology Authority in the UK, an institution having a comprehensive field of study and that makes decisions on issues regarding to embryo can be established; thus the decision on genetic screening for each case separately and on selection of the embryos according to the genetic screening can be taken by this institution. A commission with narrower authority that could only permit genetic screening can be preferred. The establishment and functions of the Scientific Commission for Genetic Diseases mentioned in the guideline can be restructured for this purpose. Whichever way is adopted, the new regulation should clarify some crucial points.

[9] For instance, according to an expert's opinion, one-fourth of nearly 250 test-tube baby applications in Memorial Hospital Diagnosis Center for Genetic Diseases, more than 100 genetic screening procedures are realized for 'diagnosis of genetic disease' in each month (Özgön, 2007).

In this scope, for instance, some couples might have an abortion due to chromosome disorders or diseases related to genetics. Similarly, there can be couples who can get pregnant in the natural ways but give birth to sick or disabled children or have the possibility to give birth to such children. These couples, in fact, cannot benefit from the ART methods according to the guideline because they can have children in the natural way. Clear provisions should be laid down on the issue if the couples could benefit from the ART procedure for the embryos to be genetically screened. In other words, legal rules should be laid down on in terms of what genetic diseases the test-tube baby application and embryo selection are permitted.

There are examples in which couples in Turkey, and also Italian couples that came to Turkey for this purpose, benefitted both from the ART practice and genetic screening in Turkey (See. Erşan, 2006; Erşan, 2007; Özcan, 2006; 'Beş Ölüm ve Bir Mucize', 2007). It is indicated that in the applications carried out in the test-tube baby centers, before the embryos are placed into the uterus, embryo selection through genetic screening (with preimplantation genetic diagnosis method) was done according to the conditions as follows: 'We practice this method on those who have a genetic disease in his/her family, women at and over the age of 38 who might possibly give birth to disabled children, women having low possibility of getting pregnant and high possibility of abortion, as well as the couples who tried test-tube baby practice for many times and could not have children, and the men who have a low quality of sperm' (Kahraman, 2007).

There is a common *de facto* application of embryo selection in Turkey which is not in compliance with the legal rules. Considering in terms of the entire of the reproduction process, selection of embryos through genetic screening means the creation of the selected children. The selected embryos/children bring about the issue of instrumentalization of members of the humanity and many other related social and moral issues. There is not any legal restriction for the selected child application in Turkey, except for the prohibition of sex determination. Parallel to the technological advances, the number of testable 'diseases' increases gradually. 'Genetic risks' such as heart disease, obesity, early dementia can turn out to be the criteria in the embryo selection. Although it is thought that an analysis is carried out in genetic diagnosis centers for diagnosing the disease, similar to the prohibition of sex determination in the guideline, the genetic screening and embryo selection seeking for perfect children in terms of genetic characteristics should explicitly be prohibited.

The Guideline for Control Program for the Hereditary Blood Disease Haemoglobinopathy and Diagnosis and Treatment Centers (HBD Guideline in abbreviation) is more explicit than GD Guideline in referring to the diseases. These diseases, i.e. haemoglobinopathies, are 'abnormal haemoglobins particularly

thalassemia and sickle-cell anemia'. HBD Guideline was formed on the basis of the Law for Fight against Genetic Diseases which declares that it is the duty of the state to prevent hereditary diseases and fight against them. As in the case of genetic diseases, the easiest way to prevent and fight against haemoglobinopathy is to eradicate the patients rather than the disease itself, preferring abortion after the prenatal diagnosis. According to Regulation of Uterine Evacuation, diseases causing chronic anemia are regarded as medical reasons for abortion regardless of ten-week-period condition. It is legally possible for the test-tube embryos to be tested for the prenatal diagnosis of the hereditary blood diseases which the HBD Guidline aims to prevent. In spite of the non-existence of a clear provision, it can be interpreted that selection of embryos that have no indication of related diseases is legally permitted within the context of prevention of and fight against the genetic diseases. The embryos can be expected to be subject to the disease testing parallel to the ART procedure if the prospective mother and father using the ART methods to have children are carriers of the disease.

At this very point, we can point at three issues. We have seen that 'disease diagnosis' given by the centers working in accordance with both GD Guideline and HBD Guideline results in abortion. Although it allows carrying out genetic tests on embryos, the Biomedicine Convention prohibits any form of discrimination against a person on grounds of his or her genetic heritage (Article 11)[10]. Therefore, discarding an embryo with abortion just because it has tendency to a disease due to its hereditary characteristics is a clear indication of discrimination for genetic reasons, which does not comply with the provision of the Convention that prohibits discrimination.

Similar to the issue of having a child that has a genetic disease, as I stressed above, the second issue is that a couple who has the potential to have children in the natural way, but also possibility to have children with predisposition of a genetic disease are not appropriate for the conditions of practicing the ART. According to the ART Guideline, there are not any criteria for the selection of patients indicating the possibility for the child to have a hereditary blood disease, if the couple have a child in the natural way, even in case the couple complies with the condition of 'certifying with document that they cannot have children using methods other than the ART methods'. According to the provisions in force, the fact that prospective mother and father are carriers of haemoglobinopathy does not result in their inclusion in the ART process so as to have a healthy child.

The last one is the problems with regard to consent. Embryos are examined in accordance with the provision of the HBD Guideline 'no action can be taken

[10] See Çoban 2007b for the discussion on if the term 'person' used in the convention and the article includes the embryo.

without consent of the applicant' (Article 11). Therefore, even it is the carrier of the disease, the couple can consent to the ART procedure, but may not necessarily consent to the disease testing. Then, does the married couple, by consenting to the ART procedure, also consent beforehand to the placement of only the healthy embryo in the uterus after the selection of the embryos in terms of haemoglobinopathy? Even the couple consents both to the ART and disease test, it can opt for the disease criteria not to be used in the selection of embryos; it can demand the transfer of the embryo into the uterus even if it is affected by the disease; and also it can choose the sick embryos to be frozen. According to the GD Guideline, similar issues on consent are true for embryos which are given the 'genetic disease diagnosis'. That is, taking the consent of the couple for the ART procedure and the disease test does not mean that their consent for the selection of the embryos is taken as an obligation. At this point, in case the aim of prevention-fight against the disease according to the Law for Fight against Genetic Diseases conflicts with the demand of the couple, what kind of decision will be taken about the embryo? Neither the ART Guideline nor the HBD Guideline, nor the GD Guideline includes any clear provision for this conflict. Furthermore, according to the general rule, all these procedures are dependant on the condition of consent. The consent of the couple should be taken for each seperate intervention. Thus, no action can be taken without consent of the couple. The couple can withdraw its consent at any stage of the process.

Data or test results collected from the embryos examined at the centers in terms of genetic/hereditary diseases are confidential. Without consent of the person who consented to the test, the results cannot be disclosed and shown to the third parties (GD Guideline, Article 19; HBD Guideline, Article 11). The rule for confidentiality of the genetic information about the embryos was laid down, hindering disclosure of the genetic information about them. Confidentiality of the genetic information can act in two-way both for the protection of embryos and the couple. A third party who obtained the results may force for a selection in favour of person A and thus to the detriment of embryo B. The couple can adopt (or not) the test results as a reference in deciding on embryo selection. In the case of placement of the embryo with or without the risk of disease into the uterus, i.e. in any case, the genetic information disclosed to the third parties can be used in favour of or to the detriment of the baby or the couple in the prenatal and postnatal period. As a simple example to this, the information about the test results might be obtained by insitutions registered at the private health system. This information will be significant in determining the amount of the insurance premium in the prenatal and postnatal period. If it were not for the the confidentiality, the genetic information about the embryo placed in the uterus might be obtained and used by others after the birth. It is not difficult to estimate that no one would approve the use of genetic data acquired from the tests

on embryo for himself/herself. Similarly, it can be estimated that being known as a selected embryo/human-being by other people would ruin interpersonal relationships.

TISSUE COMPATIBILITY

Here we come to another legal issue in saviour sibling phenomenon. As I stressed before, the two guidelines related to genetic diseases and hereditary blood diseases regulated the rules for establishing centers where *diagnosis* is made. In this respect, the center which conducts genetic screening of the embryos for saviour sibling application and seeks for *tissue compatibility* with the sister/brother to be saved can be regarded as acting out of purpose. The centers are forbidden to act out of purpose. For instance, if a sister/brother needs the stem cells to be collected from the cord blood of his/her sibling to be born for the treatment of Mediterranean anemia, it should be detected that the sibling to be born is not a carrier of Meditarranean anemia. Also, genetic screening is required so as to find out if he/she has the tissue compatibility with the sister/brother. As is seen above, the regulating rules provides us with the interpretation that embryos can be screened so as the child to be born not to have a hereditary disease. Moreover, diagnosis centers cannot legally carry out genetic screening for tissue compatibility since these centers can operate not for tissue compatibility but for diagnosing. Therefore, depending on the non-existant tissue compatibility criteria selection of the embryo to be placed in the uterus is impossible within the scope of the rules in force.

There is another legal issue about saviour sibling application at the next stage when the cord blood is used in transferring stem cells to the sister or brother. Cord blood is the blood collected from the umbilical cord after child-birth. It enables the baby in uterus to take oxygen and nutritious substances from his/her mother. According to the Guideline for Cord Blood Banking, 'cord blood colleting process begins with mother's signing of the Informed Consent Form for Cord Blood Donation (Annex 1) before the child-birth' (Article 18/a). The names and surnames of the donor mother and the child who is the owner of the cord blood are asked in the consent form. Also, as a 'term of storing cord blood', the donor mother is asked to reply the question if it is for donation open to everyone (allogenic) or the use only for the child who is the owner of the cord blood (autologous). Concluding from the guideline and its annex, mother is the donor, and the newborn baby is the owner of the cord blood. When the owner of the cord blood stored for autologous use dies, his/her rigths pass to the inheritors (Annex 1). But the bank storing the cord blood is not legally responsible to the owner of the right but to the donor who pays for the storage of the cord blood (Article 18/f). The cord blood is stored either for allogenic or autologous use. It is stored for a fee for autologous storage, while allogenic storage is

free. Before the cord blood is used for sister or brother, the cord blood need to be stored in some cases for some medical reasons. For instance, the saviour sibling may need to gain weight and a well condition to donate bone marrow for obtaining extra stem cell, or the sister/brother may not develop the disease.

Whereas, in the guideline, there is not a third option for storing the cord blood in the bank for the treatment of the sister or brother. In order to carry out a procedure in accordance with the guideline, first, the cord blood of the newborn child should be stored for autologous use; then the donor mother should give up storing the cord blood and allow it to be used for the treatment of the sister or brother. In fact, the application aims at storing the cord blood for the saved sibling. Now that the saviour sibling is the owner of the cord blood and has rights on it, which is the case in the guideline, then how can we explain the unlimited authority of the donor mother who can take any decisions related to the cord blood stored for fee whose rightful owner is the child? Presumably, we can explain it with capitalism which regards money as the criteria for everything. So, would I have the right to take any decision on my neighbour's car if I kept it in a car-park for fee for one or two years?

Some rules for the transfer of stem cells obtained from cord blood are attached to the provisions which regulate tissue transplantation. The Law for Organ and Tissue Collection, Storage and Transplantation is the basic regulation on 'collection, storage, vaccination and transplantation of organs and tissues for therapeutical, diagnostic and scientific purposes' (Article 1). This law defines organ and tissue as 'all kinds of organs and tissues and their parts that altogether form the human-being organism' (Article 2). The Guideline for Organ and Tissue Transplantation Services does not provide satisfying regulative provisions concerning to the issue. This guideline indicates that establishment and working procedures of centers for organ and tissue transplantation and tissue typing laboratories shall be regulated by directives. One of the directives is the Directive for Centers for Bone Marrow Transplantation and Data Processing Centers for Bone Marrow Transplantation, which defines transplantation of stem cells collected from cord blood within the scope of bone marrow transplantation. In the same directive, 'donor' is defined as 'voluntary bone marrow and/or stem cell donor'. Another directive called Directive for Tissue Typing Laboratories regulates rules on establishment and working procedures laboratories that could carry out tissue typing of donor and recipient.

In the light of these regulations, it can be said that it is not against the rules in force to obtain stem cells from the cord blood of a child who was born as a selected baby, to carry out tissue typing and to transplant stem cells to another sick person. However, it should be emphasized that there is not a harmony between the provisions of the related law, guideline and directive. It is not clear in these regulations whether obtaining stem cells from cord blood and its transplantation is legally handled as cell/tissue transplantation or as blood transplantation. According to the Law for Blood and Blood Products, 'blood stem cell applications are out of the scope of this law' (Article 1). The Guideline for Blood and Blood Products which was laid down according to this law, expectedly excludes blood stem cells from its scope. The Law for Organ and Tissue Collection, Storage and Transplantation, on the other hand, excludes blood transplantation from its scope (Article 2). If the stem cells collected from cord blood are legally regarded as tissues (for instance, according to Hakeri (2007: 535), a stem cell is a tissue), it can be said that there a violation to the provision of the law for organ and tissue transplantation which prohibits collecting organ or tissue from those who are under the age of eighteen and who do not possess the ability to make sensible decisions (Article 5). Thus, it can be concluded that none of the regulations on collection and transplantation of organs and tissues include clear provisions enabling to look for tissue compatibility between the embryo and the recipient, and enabling embryo selection.

Indeed, there is a legal basis that delegitimises embryo selection looking for tissue compatibility in Turkey. In case of tests or examinations on embryos, the conditions indicated in the Article 12 of the above-menioned Biomedicine Convention shall be applied. That is to say that the tests can only be carried out in order to serve for the health of the embryo and to understand if there are hereditary characteristics that could cause diseases for the future child[11]. It is contrary to the Article 12 of the Convention to protect interests of third parties, to look for tissue compatibility with third parties, and to apply genetic test on the embryo to decide on embryo selection depending on this compatibility in the diagnosis centers woking both in accordance with the GD Guideline and the HBD Guideline, and in centers and laboratories working in accordance with regulations for organ and tissue transplantation.

CONCLUSION

I put forth, in the discussions above, that the test-tube embryo is either exposed to interventions without legal basis, or illegal interventions, or legally questionable interventions. Embryos are exposed to various interventions due to legal gaps, contradictions, or unlawful actions (e.g. such as genetic tests on embryo, looking for tissue compatibility as saviour sibling and embryo selection). In addition, there are also rules that restricts creation of embryos in test-tube, taking them under protection (e.g. prohibition of using embryos for purposes

[11] The decided attitude of the European Council, to which Turkey is a member, and which hosts to the Biomedicine Convention is reflected to other documents. Parliamentary Assembly stresses in its two recommendations on embryos that any analysis or intervention on the embryos in test-tube or uterus for diagnosis or treatment shall not be permitted as long as it does not aim to ensure and sustain well-being of the future child (Council of Europe, Parliamentary Assembly, 1986: Appendix, paragraph A and B; 1989: Appendix, B.4).

other than reproduction, and of having children using other methods). It was mentioned that residual embryos come out in the process of creating embryos for reproduction. The main reason to this situation is a legal gap which leads to creation of much more embryos than the permitted number to be placed in uterus. The fact that there is not a legal limit on how many embryos at most can be created in each test-tube baby application gives an impression on the formation of embryos' legal status in test-tube baby regulations. Non-existence of a numerical upper limit shows that the embryo is handled with the test-tube baby application which is expected to be effective and efficient and as a function of reproduction process. The ART Guideline reflects an approach which, in advance, enables creation of embryos to be dysfunctionalized in the test-tube baby process and does not regard discarding them as a legal issue. If test-tube embryos were regarded as human-beings who have the right of capacity, the issue of discarding or freezing embryos that are not placed in uterus would need to be resolved as a human rights issue. The discourse of the guideline suggests a wording specific to objects such as 'keeping, using, transferring, selling, discarding' embryos.

We have also seen that the ART Guideline hinders the embryos to be adopted (embryo donation) by other parents and placed into uteruses of other women who want to have children, and prefers the residual embryos that come out in the test-tube baby process to be discarded. In other words, it eliminates the possibility for the embryos to continue their development process, leaving the residual embryos used as a means for the purpose of reproduction/having children deprived of a legal status that could at least protect them in respect of this purpose. On the other hand, the prohibition of using embryos for any purpose other than reproduction is a crucial protective provision for the embryos so as not to be used as experiment material. Thus, here comes a huge contradiction: on the one hand, the residual embryos are so trivialized that they are not allowed to be adopted by other prospective mothers and to continue their development in uterus, and even they are discarded; on the other hand, they are considered so precious that they are not allowed to be used in any research.

The situation with the residual embryos should be revised because they are not involved in test-tube application. A regulation can be laid down bring about an upper limit for the number of embryos to be created and not to allow creation of residual embryos. The residual embryos can be allowed to be adopted by other prospective mothers (embryo donation). As it is known, there is not a right of reproduction within human rights, but the right to found a family. It is not necessary to have a child from the same 'blood' of the parents in order to found a family. A rule should be laid down for the issue on how many days the test-tube embryos should be kept for before they are placed into uterus. A rule should be

formed on whether 'saviour sibling' application is permitted, and if it is permitted, a list of diseases for which the practice is applicable should be organized.

As indicated in the constitution, fundamental rights can only be restricted by law (Article 13). However, the issue of establishing ART centers, diagnosis centers for genetic diseases and diagnosis and treatment centers for genetic diseases is regulated by guideline, while applications which would end in violation of the rights of the embryo are regulated by guideline too. For instance, the practice of test procedures on the child in the mother's uterus, who has the right of capacity, in order for detecting whether he/she has a hereditary blood disease is regulated by a guideline. It is necessary to protect rights of both the mother and the child due to the risks of interventions that could lead to the death of the child due to abortion or some permanent problems as in the case of amniocentesis. In this respect, the issues indicated in ART, GD and HBD Guidelines should be regulated as laws rather than guidelines. If we accept that an embryo has the fundamental human rights, the regulation must indispensably be formed as law. Even if we do not accept this interpretatiton, it is not legal to regulate the practices which can pose a threat for the health of a woman whose fundamental rights are protected by the constitution.

In fact, the uncertainities and legal gaps about the activities of the centers derive from the fact that it is the guidelines that determines the rules for establishment and working procedures of the centers. The state, rather than determining the rules, limitations and prohibitions related to the legal status of embryo and the interventions on it, formed the rules for establishment and activities of the centers such as how many rooms should be constructed, what kind of device and equipment should be used, etc. As the legal status of the embryo is left aside as such, it is a rightful question to ask whether these centers, established in accordance with the guideline, are places for intervention on the embryo which are flexible, contradictory, as if acting with an absolute freedom in legal terms.

The law-maker should decide if the test-tube embryo is a completely different entity compared to the one in the mother's uterus; if he/she regard the embryo as human capable of rights after a certain period of time (7 days, 14 days, etc.); or if the embryo, whether in the uterus or the test-tube, possesses the rights at the earliest stage of its development, i.e. fertilisation; and thus put an end to the ambiguity. In my opinion, it is wrong and unnecessary to form a regulation depending on the distinction of the embryo in the test-tube and the uterus. It is also important that if this ambiguity is really desired to be removed, because ambiguities and contradictions extend the intervention possibilities on the embryo. Legal ambiguities, gaps and contradictions show that legal regulations are incomplete, and these regulations are left incomplete deliberately. This incompleteness, on the other hand, leads us to a hesitation on whether to regard

the test-tube embryo a human-being or not. Due to the guidelines and circulars formed by related units of the ministry, it is inevitable to encounter fragmented, contradictory and inconsistent bunch of regulations. A clear and complete regulation is needed on this issue. This can be achieved with a regulation in the form of law (law for protection of embryo) which acts as a regulative means for rights.

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