The Social Impact of the Offer of Assisted Reproductive Techniques (ART) in a University Hospital in Rio de Janeiro

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ABSTRACT

Objective: The aim of this study is to report the procedures undertaken in the laboratory of semen of a university hospital specialized in human reproduction in Rio de Janeiro, principally Homologous Artificial Insemination (HAI) taking into account a more social aspect.

Methods: This descriptive and retrospective study was based on documentary research. The source of information included medical records and registers containing the procedures performed in the laboratory of semen and the HAI. Testimonies, questionings and suggestions given by the couples during the process were also registered.

Results: The couples were clearly informed about the techniques and many times they externalized their demands, doubts and desires in relation to the procedures, treatment and issues concerning their wish to have children and start a family. The discussion shows concerns over the techniques and theories used in this context when performing procedures in the laboratory of semen.

Conclusion: The bond to the service remains based on the idea that "now my dream of having kids will come true". Nevertheless, for the operationalization of the access to ARTs, at the public sector of medicine, we should count on the implementation of the National Politics in Assisted Reproduction. It did not take place and today it has even been removed, no longer being in force. It makes very clear the distance between the "*accomplishment of the desire for children*" and the reality of the provision of means and resources for ART at the medical public level in Brazil.

Keywords: Infertility, assisted reproduction, desire for children and family, human reproduction, assisted reproductive techniques (ART).

INTRODUCTION

Infertility accounts for 8 to 15 percent of couples at reproductive age, affecting 5 percent of the population and composing a critical problem in public health (Souza, 2008). More than a biological phenomenon, this condition comprehends a complex set of factors, such as personal background, imaginary and real elements, symbolic events (Chatel, 1995) and may trigger personal and relational problems (Ramezanzadeh *et al.*, 2004). In Brazil, it is estimated that approximately 278 thousand couples experience problems in having children at some moment of their fertile age (Oliveira & Costa, 2013).

Assisted reproductive technologies (ARTs) appear as a possibility to solve the problem and build a family. Teixeira *et al.* (2009) convey the family as an unquestionable social unit and the desire for a family according to Roudinesco (2003) in a "rediscovered familiarism" includes both conception and adoption; therefore, fomenting the desire for having children.

Even though the latter is presented in different ways for men and women (Teixeira *et al.*, 2009), it reinforces the social value of maternity in the so-called traditional

families or in the ones adjusted into new models - single parenting, same sex parenting, reconstituted or artificially conceived (Fonteles, 2009). The desire for maternity motivates the search for a solution to infertility, enhanced by the offer of assisted reproductive technology.

According to the literature, the medicalization of reproduction grants woman an essential role. Or does it at times restrict this role to just a mere interest in woman's eggs and/or uterus? And the father's role to the sperm? (Teixeira *et al.*, 2009) And man from species to merchandise? (Roudinesco, 2003)

"Biologization" of parenting, granted by reproductive technologies, approaches different kinds of families, making reproduction natural. Thus, supported by the biomedical model, the alternatives of medicine and reproductive technology emerge as the means to fulfill the desire (Corrêa, 2003).

This way, after the wish for conception, if resources are available, solution seems simple and feasible. In this scenario, reproductive technologies are perceived as the definite, effective and natural solution for trying to have children.

However, not always does this come true in practice since on average success is reached in only 30 percent of the cases. The twenty-first report from the Red Latino Americana de Reproducción Asistida (Zegers-Hochschild *et al.*, 2012) on assisted reproduction techniques, which includes the procedures performed by 140 centers in Latin America in 2010, revealed that out of the 37,853 assisted reproduction cycles (3,731 cycles of in vitro Fertilization - IVF), the birth rate in IVF cycles was 30.9%.

In the public sector of Rio de Janeiro, there is no IVF offer. In some institutions, the offered treatment encompasses monitoring ovulation, and as of 2010, intrauterine insemination in a university hospital. In high complexity cases, couples may find assistance in the public sector of other states. However, it is important to point out that taking into consideration the Brazilian assisted reproduction, the difficult access to ARTs may be seen in the lack of public institutions linked to Sistema Único de Saúde (SUS) offering low, medium and high complexity treatment. According to the data taken out of the 2000 National Census published in 2005, specialists estimate that approximately 500 thousand couples in Brazil need IVF (Körbes & Invernizzi, 2010).

It has become a common sense that Science has the role to "fix" nature's imperfections by providing "benefits and security to the human species". In a globalized world under political liberalism, the association of science, technique and economy made progress, richness and political freedom possible in one part of the world; whereas poverty, underdevelopment and inequality in others. Is it possible to talk about social justice in terms of democratization of access to scientific and technological development.

Before the democratization of access to ARTs techniques becomes, practices of "exchanges" - of eggs, uterus

and reproductive material - become object of commerce. Since the Ministry of Health in Brazil did not prioritize the access to ART in the public sector of medicine, this kind of possibility may present itself as the only alternative to impoverished women, the ones more dependent from SUS.

In any case, among countless dichotomies - fate and life project; natural and medically assisted conceptions; economic power and search for assistance - maternity still lies on a noticeable spot and evokes the quest for solving the problem of not having children (Corrêa, 2003; Corrêa & Loyola, 2005). As already stressed, assisted reproductive technologies represent the solution to this search.

This study was developed in a university hospital specialized in gynecology in Rio de Janeiro, with a human reproduction outpatient clinics. A characteristic of this service is the provision of a multidisciplinary care in order to tackle infertility from an interdisciplinary perspective. Previous studies in this Unit identified that between 2003 and 2005 the hospital preferably received women between 26 and 35 years old, without kids (73% of primary infertility) and 65.8% had sought assistance for three to eight years prior to their arrival in the institution (Costa *et al.*, 2009). In 2011, among the first-time patients, 46% were between 31 and 35 years old, 59% presented primary infertility, 27% had been seeking assistance for four to six years and 12% for seven to nine years (Gonçalves, 2013).

We consider primary infertility as a set of conditions in which women never achieve to get pregnant. In secondary infertility, women may have got pregnant but it does not end in a living newborn, but pregnancies are interrupted by miscarriages. The Homologous Artificial Insemination (HAI) implies that no semen donor is involved in the reproductive process; contrary to heterologous artificial insemination where you need a third donor and a more sophisticated semen laboratory (what does not take place in the case of the hospital presented here).

As of September 2010, after the inauguration of the laboratory of semen, the offer of Homologous Artificial Insemination (HAI) was enabled and the waiting list for patients clinically indicated for this procedure was restructured (Leite *et al.*, 2011). Intrauterine insemination is a widely used method in various types of infertility; however, despite being well used, Pasqualotto (2007) points out that it is not easy to precisely determine its efficacy and different rates of success are described in studies evaluating the procedures. Being recommended, the use of this technique in men with moderate oligospermia may be simple and less costly.

The aim of this study is to report the procedures undertaken in the laboratory of semen of a university hospital specialized in gynecology, within its human reproduction outpatient clinics, which is located in the city of Rio de Janeiro (Brazil), specifically related to Homologous Artificial Insemination (HAI), but taking into consideration a more social dimension, i.e., values, yearnings and questionings externalized by couples - users of the service.

MATERIAL AND METHODS

This study was developed in an Outpatient Clinic in Human Reproduction of a university hospital in Rio de Janeiro where patients of this area and nearby regions in the state are received.

This exploratory, descriptive and retrospective study was based on documentary research. The source of information (data collection) included medical records and registers containing the procedures performed in the laboratory of semen (sperm capacitation - WHO, 1999, 2010) and the Homologous Artificial Insemination (HAI) from September 2010 to December 2011. Testimonies, questionings and suggestions given by the couples during

the process of signing the Informed Consent Form for HAI are also registered in a book and allow for the contextualization of this technique in a more social dimension. Thus, all data were collected concurrently and ethical clearance regards to all dimensions of the research.

Still to be said, one may remark that sometimes it is very difficult not to take into account commentaries or remarks made from patients, as pronounced during medical procedures or interventions, and used in the discussion section below. Even though, the research cannot be defined as based on traditional ethnographic techniques.

The waiting list was reestablished by not only recovering a pre-existing list from 2003 but also by considering the patient's waiting time for procedure and age. The inclusion criteria were at least one permeable Fallopian tube (in cases of female infertility) and at least 5 million sperm count after capacitation (in male infertility) not to mention the couples who tested negative for HIV1 and 2 (Human Immunodeficiency Virus Types 1 and 2), HTLV 1 and 2 (Human T-cell Lymphotropic Virus Types 1 and 2); VDRL (Venereal Disease Research Laboratory Test - Syphilis) and Hepatitis B and C.

The medical records data and the results of 89 procedures (sperm capacitation by density gradient and HAI) were registered and filed in numerical order according to the collection date. The data bank was integrated and computerized in the program Excel/ Office 2003 and in the Special Program for Social Sciences (SPSS- version 17.0), relating to patients'/couples' epidemiological and clinical profile and the procedures that were performed - guaranteeing subsequent analysis. Among the variables, there could be observed woman's and man's ages, causes of infertility/ clinical indication for HAI, number and size of follicles after ovulation induction, gonadotropin dosage, date and time of HCG (Human Chorionic Gonadotropin), results of sperm capacitation and records of HAI.

RESULTS

From September 2010 to December 2011, 89 procedures of sperm capacitation tests and HAIs were performed. In just three situations, it was not possible to perform HAI as capacitation results were unsatisfactory, that is, less than 5 million sperms/ ml. The protocol for sperm capacitation was performed by Percoll density gradient centrifugation (40% and 80%), presenting recovery in 77.5% of all performed procedures (> 5 million/ml).

Among the female patients, the age ranged from 20 to 45: 1.9% at 20; 23.1% between 25 and 30; 21.1% between 31 and 35; 38.5% between 36 and 40 and 15.4% between 41 and 45 years old. Among the male partners, the age varied between 25 and 60: 29.3% between 25 and 30; 20% between 31 and 35; 24.6% between 36 and 40; 15.4% between 41 and 45; 9.2% between 46 and 50 and 1.5% at 60 or older.

Clinical indications for HAI showed: 44% male factor infertility, 39% idiopathic, 1.7% Polycystic Ovary Syndrome (PCOS); 8.5% tubal factor infertility; 5.1% ovulatory factor infertility and 1.7% uterine factor infertility.

The signing of the consent form so as to perform HAI took place on the same day of the procedure and right before collecting semen. The couples were clearly informed about the techniques and many times they externalized their demands, doubts and desires in relation to the procedures, treatment and issues concerning their wish to have children and start a family - all of these points were listed in the registers. The discussion shows concerns over the techniques and theories used in this context when performing procedures in the laboratory of semen.

DISCUSSION

As mentioned before, since the laboratory of semen was inaugurated, the waiting list was reformulated based on patients' 2003 records showing indication and on whether or not there was interest in undergoing the technique. It was proven that some women kept on looking for treatment, waiting for a solution for a long time, even after reducing their chances of success (Leite *et al.*, 2011).

In any way, even though patients are informed about clinical indication and the efficacy of HAI, many of them questioned the possibility of taking part in the waiting list even after being informed that there was no indication to do so. In this scenario of infertile patients, the offer of this reproductive technology rekindles the hope "now I will have children" and this understanding establishes a bond not always necessary or real. Despite all this, patients showed interest in going through this procedure even without being clinically indicated. There were cases where patients questioned and even forced their male partners to take exams and, more than that, recognized that one particular exam had been decisive because "after he came here, I got pregnant".

Vianna (2002) points out that technology has taken up an important symbolic role in health since it is the "comfort and guarantee" of using the highest potential of human knowledge in order to solve individual problems. Therefore, when understood as a consumer good, health can be maximized as technology offer grows:

In the collective imaginary, technology is not only linked to the health sector but it is also object of desire. Everybody, or almost everybody, avidly pursues the last TV model, sound system, CT Scan etc. In the far distance, humanity's redemption through scientific and technological development seems to be at sight (Vianna, 2002).

For Teixeira *et al.* (2009), the origin of assisted reproduction techniques coincides with the emergence of the desire to give birth. The authors cite Corrêa (2001), who establishes that values related to the desire of having biological children, such as maternity, fertility, gender, family ties, heredity and same blood reproduction push for the development and offer of technology and services of assisted reproduction. Therefore, there is no stopping the desire coming from ARTs, which can configure risky behaviors seen as "heroic acts": multiple pregnancy/ high-risk pregnancy (Corrêa, 2003). In this study, it is still likely for the high percentage of primary infertility to have contributed for preserving this desire, reinforcing and keeping the search for a solution/treatment for long periods of time.

In relation to the couples that used the laboratory of semen, the analysis of woman's age revealed 38.5% between 36 and 40 in accord with the data from the annual records of REDLARA which state that 39% of women performed assisted reproduction treatment at ages between 35 and 39 in 2010 (Zegers-Hochschild *et al.*, 2012), and 38% in 2011 (Zegers-Hochschild *et al.*, 2013).

Biologically speaking, the reduction of reproductive capacity with age is widely attested. However, Soares' work (2008) analyzed that infertility prevails throughout life and does not support the increase of infertility in more recent birth cohorts. Anyway, the fact that women are marrying later, the increase in age for conception, separations and new unions enable a growth in the demand for children at a more advanced age coinciding with a reduction of reproductive capacity and with a pursuit for solution (i.e., through ARTs) based on "natural" reproduction (Corrêa, 2001).

Among men, it was found a percentage of 29.3% between 25 to 30 years old and 24.6% between 36 and 40, considering that the male factor was responsible for 44 % of the indications for the procedures performed in the laboratory. Out of these, 4% corresponded to varicocele (one

post-surgical case; in the others, normal semen analysis or numerical alterations - moderate oligospermia).

Although there is a direct relation between the mother's age and the reduction in reproductive capacity, in men the hormone control and spermatogenesis may be continuous (Pasqualotto, 2007), that is, just age would not be a clear evidence of infertility. Besides, in this study, most of the male partners do not present advanced age. Among the main aspects for male infertility are cellular and physiological changes in the testicles, seminal vesicle, prostate and epididymis, diseases such as urogenital and/or vascular infections not to mention environmental factors such as exposure to exogenous risks and accumulation of toxic substances (tobacco, alcohol, and other illegal drugs). In 2011 in the hospital studied, it was reported that 55% of the first time patients' male partners were alcohol users, 19% were smokers or former smokers and 9% were users of some kind of drug (Gonçalves, 2013).

Pasqualotto (2007) states that male infertility affects 10% of the couples around the world. In the hospital where the study took place, the percentage was 13.1% in 2011, considering the first time patients (Gonçalves, 2013). Regarding the procedures performed, sperm capacitation by density gradient, referred to as the technique that increases the percentage of motile sperm specially when the patient is diagnosed with oligoasthenozoospermia (REDLARA, 2012), presented recovery in 77.5% of the procedures performed. In the cases where the result was under 5 million sperms/ ml, the patient was redirected to an andrologist.

Intrauterine insemination in the treatment of infertility due to male cause is employed in patients presenting minor changes in sperm concentration, semen volume, motility and sperm morphology, ejaculatory dysfunction and immune disorder (Pasqualotto, 2007). However, even though it is clear it is not 100 percent successful, this technique (as well as other techniques) is seen as revolutionary and the users of this service refer to it as "wonderful". In relation to the procedure, some men showed interest in knowing more details, such as how many sperms are required, how they are counted, and when they would know "if it worked".

An aspect that deserves distinction is the desire to have children, but above all, biological related children. This situation was stressed by the recurrent suspicion especially among male partners of the risk of having their semen collected for HAI changed by mistake or even misplaced. The "biologization" of parentage is based on the legitimacy of the children (Corrêa, 2001).

Teixeira, *et al.* (2009) describe different destinies for men and women in relation to their desire to have kids. Linked to the immortality of the self, "women designate themselves mothers throughout their lives and maternity is an experience of continuity, repetition and accomplishment of a project cherished since women's early days", a female vocation. In men, infertility is related to sexuality and the threat to virility.

A male partner referred to the desire to have children by associating it to the woman, but at the same time, admitting and even pleading for father role: "it is a woman's wish but we have to see what comes with it. It is a concern for the rest of your life not to mention economically speaking and so on. I have a 22 year-old daughter and I did not have the chance to take her to school, to see her grow up or to go through her adolescence years..."

The wish to have kids as a woman's desire takes back to the work of Vargas *et al.* (2010) and expresses the vision of the desire to have kids as an "individual fulfillment". At the same time it is the outgrowth of a "decision made by both" [yet] [...] "centralized in the woman's body". All in all, this study proved that women were

the ones who sought assistance and many times their male partners refused to accompany them for treatment.

One other point refers to the frequent association between the two techniques: HAI and IVF. In this respect, some couples externalized the desire to have twins and to make a sex selection: "if it is a boy, I give him back", praising their preference for girls. Since it is a university hospital, the educational principle on duty included an interdisciplinary discussion angling not only for the differentiation among procedures but also the risks involving multiple pregnancy. In some situations, the approach and the content of the information by means of communication was the topic of debates.

In a survey about the advertising of assisted reproductive technology in the newspaper *Folha de São Paulo* in 2005, Körbes & Invernizzi (2010) state that "the scientific and technological progress is presented as a synonym for universal benefits".

And even if the subjects include information on the benefits of ARTs at the same time that reveal risks in the procedures and economic barriers to the access, they do not usually refer to the access to reproductive technologies at SUS.

Therefore, the focus is on the middle and high-class public, "emphasizing the private access on the benefits normally seen as universal" (Körbes & Invernizzi, 2010). Like this, the wrong idea that technological advancements correspond to equal benefits for all is reinforced and - together with the lack of information about reproductive rights - enables the consolidation of the equally wrong information about techniques, access and solution in 100 percent of the cases.

Since the 90s', Corrêa (1997) has referred to the appraisal of maternity through the media in domineering representations about reproduction. Vargas (2010), when referring to her studies about infertile couples in the middle-class layers of Rio de Janeiro, identified this notion that conception is planned and the child is the "offspring of a decision making process that lies in the wish list, over which there is control". Likewise the work highlighted that making popular the available medical resources in the mid-class layers reinforces this idea inasmuch as it makes this wish come true.

Perhaps this wrong idea is reinforcing/keeping the search for solutions in a very long period and the interest in taking part in the waiting list for HAI even without being clinically indicated is described in the present study. This would constitute seeking a child at any price, highlighted by Fontelles (2009).

As opposed to this situation - a preponderant one - in some cases, other values involved an opposition to the technological hegemony, such as religious issues. A patient mentioned she was thinking about giving up because "I went to church and I was told that if I was not able to get pregnant, it was because God did not want it to happen and that if I insisted, the child would only bring disgrace to my life".

In the hospital where the study took place, 37% of the first time patients in 2011 revealed they were Catholic and 28% were Evangelical (Gonçalves, 2013). Because there are many biblical passages reporting miraculous cures in cases of sterility, the opposite could also be understood as part of God's plan as well as the disappointment in relation to medical treatment (White *et al.*, 2006).

Besides, although there are many religions stimulating conception in order to constitute a family, not always is it allowed to use reproductive technologies. The association between religion/creeds and infertility is complex and extremely personal but it can oppose the wish when searching for a solution (limit to the wish, according to Corrêa, 2003).

For White *et al.* (2006), the stronger the wish for having children is, the more intense the search for a treatment for infertility will be for those who do not have children or those who cannot imagine life without kids (or without kids of a specific sex). In Brazil, different studies in different times or moments found the same results (Corrêa & Loyola, 1999; Vargas *et al.*, 2010). ARTs allow the naturalization of the wish for kids and the subsequent constitution of a family.

Fonteles adds that "the search for kids at any price may seclude women in a narcissistic unit due to the omnipotence science devotes to them through the practice of assisted reproduction" (Fonteles, 2009). We should advance from an ethically free science to an ethically responsible one, from a technocracy that domineers men to a technology that is at humanity's service - man's service..., from a formal and legal democracy to an actual democracy that conciliates freedom and justice (Garrafa, 2007).

Garrafa (2007) also concludes about the importance of the democratization of access, in an indistinct and equanimous way, and the benefits of scientific and technological development. This way, it is crucial to aggregate the variety of moral values, such as responsibility and prudence, equity and fair distribution of benefits, not to mention participation and social control (participative democracy and human rights). Concisely, the author establishes the primacy of ethical control contextualized in every case in relation to the use of new technologies, being reproductive or not.

CONCLUSION

The efforts of this human reproduction Unit to offer HAI is paramount for all the dynamics of the problem of access to ART in public sector in Brazil. The first effect is the emergence of a waiting list in itself and its magnitude. The visibility of the waiting list speaks in itself.

In a context of hopelessness and questioning about the possibility of getting pregnant, due to the difficulties and complications of the treatment, may HAI establishes itself as the way out, one more try, surrounded by anxiety, wish, and expectation of fulfilling the dream of maternity. Thus, the reality of the waiting list in a university hospital specialized in reproduction in Rio de Janeiro stretches the connection with both the possibility of maternity and also the service. Paradoxically, other possibilities may be declined and/or disposed.

It is vital to offer multi-professional support and the development of educational strategies, such as reception groups and the confection of materials giving information regarding the topics of infertility and reproductive technologies. The multi-professional presence in the treatment of assisted reproduction provides the patient with a listening channel, making them comfortable, talking about their doubts, disturbances, anguishes, complaints, sufferings and consolidating then a continuous and permanent process of education in health as part of the assistance, which can be individualized on the foundation of the specificities that each patient/couple has built.

Moreover, the discussion itself of democratizing their access to ARTs is considered. In this manner it would be possible to discuss about the wish and extend the discussion of infertility including the biological, psychological and social dimensions, among others.

CONFLICT OF INTERESTS

No conflict of interest have been declared.

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