

OPINION

Religious perspectives of ethical issues in ART

1. Islamic perspectives of ethical issues in ART

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Science without conscience ruins the soul. It is therefore not surprising that science and religion have been interrelated since the beginning of human history. The last two decades have witnessed the secularization of bioethics. The religious influence on bioethics subsequently declined. Bioethics today is no longer dominated by religion and medical traditions as it used to be in the past. It has become dominated more by philosophical, social and legal concepts (1). However, in some parts of the world like Middle East, where the three major religions, namely Judaism, Christianity and Islam emerged, religion still means and influences a lot of behaviors, practices and policy makings. This also applies to conservative followers and observants of these religions in different parts of the world. The three major religions; Judaism, Christianity and Islam have encouraged procreation, family formation and child birth through natural conception within the frame of marriage. The Holy Quraan encouraged marriage, family formation and reproduction. It says: We did send apostles, before thee, and appointed for them wives and children" (2). In another Version it also says "And God has made for you mates (and companions) of your own nature, and made for you, out of them, sons and daughters and grandchildren, and provided for you sustenance of the best" (3). It also refers to the possibility of infertility among some couples as it says " He bestows

(children), male or female, according to His will (and Plan), or He bestows both males and females, and He leaves barren whom He will (4).

ART AND ISLAMIC PERSPECTIVES

With the advent of assisted reproduction technology (ART) since the birth of Louise Brown in U. K. on 25th July 1978, it became possible to separate the bonding of reproduction from sexual act (5). ART, whether in vivo or in-vitro, enabled women to conceive without having sex. ART made it possible for the involvement of a third party in the process of reproduction whether by providing an egg, a sperm, an embryo or a uterus. ART opened the way for several other practices including gender selection, preimplantation genetic diagnosis (PGD), genetic manipulation, cryopreservation of gametes, embryos and gonads, cloning ...etc. This challenged the age-old ideas and provoked ethical debate which continued since its earliest days (6). An inconsistent attitude was created in many countries all over the world regardless of the religious, cultural, economical or political background of these countries.

The teaching of Islam covers all the fields of human activity; spiritual and material, individual and social, educational and cultural, economic and political, national and international. Instruction which

regulates everyday activity of life to be adhered to by good Muslims is called Sharia. There are two sources of Sharia in Islam: primary and secondary. The primary sources of Sharia in chronological order are: The Holy Qur'an, the very word of God, the Sunna and Hadith, which is the authentic traditions and sayings of the Prophet Mohamed as collected by specialists in Hadith, *ijmaah*, which is the unanimous opinion of Islamic scholars or *Aimma* and analogy (*Kias*), which is the intelligent reasoning, used to rule on events not mentioned by the Quraan and Sunna, by matching against similar or equivalent events ruled on. The secondary sources of Sharia are *Istihsan*, which is the choice of one of several lawful options, views of Prophet's companions, current local customs if lawful, public welfare and rulings of previous divine religions if they do not contradict the primary sources of Sharia. A good Muslim resorts to secondary sources of Sharia in matters not dealt with in the primary sources. Even if the action is forbidden, it may be undertaken if the alternative would cause harm. The Sharia is not rigid. It is flexible enough to adapt to emerging situations in different items and places. It can accommodate different honest opinions as long as they do not conflict with the spirit of its primary sources and are directed to the benefit of humanity (1,7-9). Islam is a religion of *Yusr* (ease) not *Usr* (hardship) as indicated in the Holy Quraan (10) The Broad Principles of Islamic Jurisprudence are permissibility unless prohibited by a text, (*Ibaha*), no harm and no harassment, necessity permits the prohibited and the choice of the lesser harm. ART was not mentioned in the primary sources of Sharia. However, these same sources have affirmed the importance of marriage, family formation and procreation (2-4,11-12). Also, in Islam adoption is not acceptable as a solution to the problem of infertility. Islam gives legal precedence to purity of lineage and known parenthood of all children. The Quraan explicitly prohibits legal adoption but encourage kind upbringing of orphans (13). In Islam infertility and its remedy with the unforbidden is allowed and encouraged. It is essential if it involves preservation of procreation and treatment of infertility in the married couples (7). This is applicable to ART, which is one line of treatment of infertility. The prevention and treatment of infertility are of particular significance in the Muslim World. The

social status of the Muslim women, her dignity and self esteem are closely related to her procreation potential in the family and in the society as a whole. Childbirth and rearing are regarded as family commitments and not just biological and social functions. As ART was not mentioned in the primary sources of Sharia, patients and Muslim doctors alike thought by seeking ART for infertility treatment, they are challenging God's will trying to make the barren woman fertile, and handling human gametes and embryos. ART was only widely accepted after prestigious scientific and religious bodies and organizations issued guidelines which were adopted by Medical Councils or concerned authorities in different Muslim countries and controlled the practices in ART centers.

These Guidelines which played a role in the change of attitude of society and individuals in the Muslim World included Fatwa from Al-Azhar, Cairo 1980 (7) and Fatwa from Islamic Fikh Council, Mecca 1984, the Organization of Islamic Medicine in Kuwait, (1991), Qatar University (1993), the Islamic Education, science and culture organization in Rabaat (2002), the United Arab Emirate (2002), and the International Islamic Center for population studies and research, Al Azhar University (14-19). These bodies, stressed the fact that Islam encouraged marriage, family formation and procreation in its primary sources. Treatment of infertility, including ART when indicated, is encouraged to preserve humankind within the frame of marriage, in otherwise incurable infertility. The attitude of patients changed from rejection, doubt, feeling of shame, guilt and secrecy when seeking ART in the eighties to openly asking ART in the nineties. The introduction of the effective ICSI treatment for male infertility played a role in the change of attitude of many couples to ART (9). In family affairs particularly reproduction the decisions are usually taken by the couple. However, not uncommonly the husband's decision is the dominating one. Husbands became very enthusiastic about ART. They took the initiative and encouraged their wives to undergo ART treatment for male, female or unexplained infertility. Today the basic guidelines for ART in the Muslim World are: If ART is indicated in a married couple as a necessary line of treatment it is permitted during validity of marriage contract with no mixing of genes. If the marriage contract has

come to an end because of divorce or death of the husband, artificial reproduction cannot be performed on the female partner even using sperm cells from former husband. The Shi'aa Guidelines has "opened" the way to a third-party donation, via Fatwa from Ayatollah Ali Hussein Khomeini in 1999. This Fatwa allowed third-party participation including egg donation, sperm donation and surrogacy. The Fatwa is gaining acceptance in parts of the Shi'ite world. Recently there has been some concern about sperm donation among Shi'aa. All these practices of third party participation in reproduction are based on the importance of maintaining the family structure and integrity among the Shi'aa family. They are allowed within various temporary marriage contract arrangements with the concerned donors.

SURROGACY

Surrogacy is not permitted for most sunni. The Fatwa of the Fikh council in 1984 allowed surrogacy by replacing the embryos inside the uterus of the second wife of the same husband who provided the sperms. In 1985 the council withdrew its approval of surrogacy (1,6,14).

Recently there had been a debate among Sunni Scholars on surrogacy. While some religious authorities thought that it can be permitted, others believed that it should not be approved.

CRYOPRESERVATION

The excess number of fertilized eggs can be preserved by cryopreservation. The frozen embryos are the property of the couple alone and may be transferred to the same wife in a successive cycle but only during the validity of the marriage contract. (7,8,16-18) Whether couple's preserved embryos could be implanted in a wife after her husband's death was discussed in an international workshop organized by The International Islamic Center for Population Studies and Research, AL Azhar University in 2000. The strict view was that marriage ends at death, and procuring pregnancy in an unmarried woman is forbidden by religious laws, for instance on children's rights to be reared by two parents, and on inheritance. After due time,

the widow might remarry, but could not then bear a child that was not her new husband's. An opposing view, advanced as reflecting both Islamic compassion and women's interests as widows, was that a woman left alone through early widowhood would be well and tolerably served by bearing her deceased husband's child, through her enjoying companionship, discharge of religious duties of childrearing, and later support. The Grand Mufti of Egypt (personal communication) stated that permission had once been given for embryo implantation in a wife following her husband's death, based on the circumstances of the particular case. However, this should not be taken as a generalization, and each case should be considered on its own merits (18,20).

MULTIFETAL PREGNANCY REDUCTION

Multifetal pregnancy particularly HOMP should be prevented in the first place. Should HOMP occur in spite of all preventive measures then multifetal pregnancy reduction may be performed applying the jurisprudence principles of necessity permits the prohibited and the choice of the lesser harm. Multifetal pregnancy reduction is only allowed if the prospect of carrying the pregnancy to viability is small. Also it is allowed if the life or the health of the mother is in jeopardy (16,20-22). It is performed with the intention not to induce abortion but to preserve the life of remaining fetuses and minimize complications to the mother.

EMBRYO RESEARCH

Development of embryo/fetus advances step by step with its morphological development and growth from a clot to a lump of flesh then boned flesh and finally a fully grown infant (23,24). Till forty days the embryos in the mother's womb is "a nutfa", then "an alaqa" for an equal period then "a mudgha". The organ differentiation occurs in 42 days after fertilization. Ensoulment of the fetus occurs after 120 days from fertilization (25). The old threshold of forty days and upwards from conception has been brought back to fourteen days, because the new embryology has established this embryonic period of cellular activity before which individuation

cannot begin (15). Embryo research, for advancement of scientific knowledge and benefit of humanity, is therefore allowed before 14 days after fertilization on embryos donated for research with the free informed consent of the couple. However these embryos should not be replaced in the uterus of the owner's of the eggs or in the uterus of any other woman.(7,8,15,18) Reflecting the unstructured ethical governance of research in several of the Muslim countries should each country form a national research ethics committee to which any proposed research involving the use of gametes or embryos outside the body shall be submitted for prior review and approval.

SEX SELECTION

The use of sperm sorting techniques or PGD for non-medical reasons such as sex-selection or balancing sex ratio in the family is guarded. These techniques are better alternative to prenatal diagnosis that necessitates abortion for sex selection. Muslims adhere to the view that human life requiring protection commences two to three weeks from conception and uterine implantation (15). Accordingly, decisions not to attempt replacement of embryos produced in vitro on grounds that they show serious chromosomal or genetic anomalies, such as aneuploidy, cystic fibrosis, muscular dystrophy or hemophilia, are accepted. PGD is encouraged, where feasible, as an option to avoid clinical pregnancy terminations for couples at exceptionally high risk (20). More contentious is non-medical purposes of sex selection. Arabs more than 1400 years ago, before Islam, used to practice infanticide for gender selection. The Holy Quraan described this act and condemned it (26,27). It says : "On God's Judgment Day the entombed alive female infant is asked, for what guilt was she made to suffer infanticide?" Sex selection technologies have been condemned on the ground that their application is to discriminate against female embryos and fetuses, so perpetuating prejudice against the girl child (28), and social devaluation of women. Such discrimination and devaluation are condemned in the Muslim World. However universal prohibition would itself risk prejudice to women in many present societies, especially while births of sons

remain central to women's well-being. Sex ratio balancing in the family is considered acceptable, for instance where a wife had borne three or four daughters or sons and it was in her and her family's is best interests that another pregnancy should be her last. Employing sex selection techniques to ensure the birth of a son or a daughter might then be approved, to satisfy a sense of religious or family obligation and to save the woman from increasingly risk-laden pregnancies (29,30). Application of PGD or sperm sorting techniques for sex selection should be disfavored in principle, but resolved on its particular merits with guidelines to avoid discrimination against either sex particularly the female child (20,29,30). It should not be used for selection of the sex of the first child or for selection of one sex only in the family. Also it is only applied to families who have children of only one sex and have intense desire to have one more child of the other sex. The service is only provided after proper counseling with the reproductive medicine physicians, geneticist, social scientist and psychologist (31).

PREGNANCY IN THE POSTMENOPAUSE

The possibility of postmenopausal pregnancy in the past before cryopreservation was considered dependent on ovum donation, which was disapproved in principle as it involves mixing of genes (7,8,22). Also pregnancy after menopause is associated with increased risks for both mother and child. Accordingly, it was unacceptable in the Muslim World's (17). However with the development of cryopreservation it is now possible to have pregnancy in the post menopause using one's own cryopreserved embryos or even oocytes and possible in future cryopreserved ovaries. Taking into consideration special care necessary for the safe induction and completion of pregnancy in a woman who was of advanced, or beyond normal, childbearing years, and of the easier case where premature menopause affects a woman who would otherwise be of suitable maternal age, and the children's needs of parents likely to survive at least into their mid-adolescence, research efforts should be concentrated on the prevention of premature menopause and that the postmenopausal pregnancy be permissible to attempt in exceptional cases

justified by maintenance of integrity of a child's genetic parentage, the pressing nature of the circumstances, the relative safety to mother and child, and parental capacity to discharge childrearing responsibilities (18,20).

CLONING

Reproductive cloning for creation and birth of a new person who would be the genetic twin of one born previously is condemned. Research in non-reproductive cloning, particularly for stem cell creation, study and research intended for human benefit is encouraged. Encouragement is not limited by recognition that use of deliberately created embryos is likely to be involved. Study and research were anticipated to have a beneficial impact on reproduction, in that understanding of the origins of genetic defects in embryonic and fetal development, would facilitate prevention and correction of defects, and, when prevention or correction were impossible, selection of healthy gametes, or embryos (18). Some theologians are sympathetic to consideration of reproductive cloning of cells of a childless sterile man if his wife was willing so to bear the child, to permit discharge of religious duties and relieve family distress and risk of marriage breakdown through the wife's right of divorce. There would be no violation of the rules against third-party involvement or against confusion of lineage. However, the genetic father would be the husband's father, introducing problems of his consent and perhaps of inheritance laws. On balance, it is considered rather premature to recommend departure from the prevailing condemnation of reproductive cloning (18,20).

Allied with stem cell research is the prospect of gene therapy. Progress in somatic cell gene therapy; which alters the genes only of a treated patient, has suffered recent setbacks, and germline gene therapy, which would affect all future generations of a patient's offspring, remains little short of universally condemned and prohibited (32). Genetic alteration of embryos before their cells have reached differentiation, that is while they are still totipotent, would constitute germline manipulation. Little would be added to reiterate prevailing condemnation. Gene therapy is a

developing area that may be used with ART in the future. It is critical that its use be clearly beneficial, focused on alleviating human suffering. The focus on therapeutic applications would exclude purely cosmetic uses and goals of enhancement of non-pathological conditions. Alleviation of genetic diseases and pathological conditions alone would exclude such applications as to make people who would be within the normal range of physique, capacity and aptitude taller, stronger, more likely to achieve athletic success or to be more intelligent or artistically sensitive or gifted. Gene therapy might be legitimate, not to promote advantage or privilege, but to redeem genetically or otherwise physiologically inherited disadvantage (7,8,16).

CONCLUSION

Physicians providing ART are always concerned about legislations of various practices of ART in countries where they are practicing. However in many countries legalizations do not exist and physicians follow guidelines issued by prestigious concerned bodies and organizations if they exist.

With globalization doctors and patients alike are moving around to different parts of the world; it becomes not uncommon that physicians may have to provide medical services to patients with an ethical precepts which are different from that of their own. However Conscientious objection to offer certain required treatment to patients by their physicians should not deprive them from the right of being referred to other physicians who would provide such treatment. It becomes therefore mandatory to be aware of various religious perspectives on various practices in ART.

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2. The views of the Coptic Orthodox Church on the treatment of infertility, assisted reproduction and cloning

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Coptic

The word "copt" derives from the Greek Aigyptios "Egyptian" via Coptic kyptaios and Arabic Qibt. Aigyptios derives from hikaptah, house of the Ka (spirit) of Ptah one of the names for Memphis, the first capital of Ancient Egypt (1). The Arabs, upon arriving to Egypt in AD 640, called Egypt dar al Qibt (home of the Egyptians)

and since Christianity was the official religion of Egypt, the word Qibt came to refer to the practitioners of Christianity as well as to the inhabitants of the Nile Valley (1).

The First Book on In Vitro Fertilization

The first book on the opinion of the Coptic Orthodox Church on In Vitro Fertilization and