

In the Name of Allah, Most Gracious, Most Merciful

Recommendations of Stem Cells Seminar

With Allah's Help and Guidance, the IOMS held an international seminar on "**Dilemma of Stem Cells: Research, Future and Ethical Challenges**" in Cairo, Egypt, in cooperation with the WHO regional office in Cairo; UNESCO; ISESCO; and the Islamic Fiqh Academy in Jeddah. The Seminar took place between 23 and 25 of Shawwal 1428 A.H./3-5 November 2007 under the auspices of Professor Hatem Al Jabaly- the Egyptian Minister of Health and Housing.

Eighty researchers participated in the seminar from the following countries: Egypt, Kuwait, KSA, UAE, Jordan, Syria, Sudan, Morocco, Tunisia, Algeria, the Islamic Republic of Iran, Malaysia, USA, England, Germany and Sweden.

Among the participants also was a number of officials, university professors and medical schools deans. The seminar began its activities Saturday morning, the 3rd of November 2007, in the Kuwait Hall at the WHO regional office headquarters in Cairo. It began with the recital of Qur'anic verses and the addresses of:

- Prof. Orio Ikebe, the UNESCO representative
- Prof. Abdel Hamid Nada, the ISESCO representative
- Prof. John Bryant, the representative of CIOMS
- Prof. Mohamed Haitham Al Khayyat, the representative of the WHO regional office
- Prof. Abdul Rahman Al Awady, President of the IOMS

The seminar has approved of the following terms used in the presented papers:

First: Types of Stem Cells: these are the first cells, from which the fetus is formed. These cells have the potential to divide producing either similar cells or different types of cells- unlike the other cells- that divide on their part producing cells similar to the mother cell. In humans, there are several types of stem cells:

- (a) Totipotent stem cells: these have the full potential to form any type of body cells, including those supporting the fetus like the membranes and the placenta as used by the US President's Council on Bioethics, totipotent refers to the capacity to form the integrated

unity of a whole living organism. Pluripotent refers to the ability to produce all or most all of the cell types of the human body, but not the whole living organism. The distinction you are drawing in this document is scientifically ambiguous, since it appears that mouse ES cells may be capable of forming trophoctoderm when provided with certain culture conditions. Likewise, this is true with human ES cells.

- (b) Pluripotent stem cells: those have the full potential to form any of the body cells except the fetus-supporting cells.
- (c) Multipotent stem cells: these are specialized stem cells that have the potential to form the cells of a specific human tissue.

Second: Sources of Stem Cells:

1. Stem cells obtained from human embryos/fetuses:

- (a) IVF and artificial fertilization surplus embryos.
- (b) Embryos especially prepared for this purpose: through the fertilization of donor eggs by donor sperms.
- (c) Fetus aborted at any of the phases of pregnancy
- (d) Chimera; a fetus prepared by fertilizing an animal egg with a human sperm
- (e) Therapeutic cloning

2. Stem cells obtained from sources other than embryos/fetuses:

- (a) Placental or umbilical cord blood
- (b) Children
- (c) Adults
- (d) Pluripotent cells from non-embryonic sources as proposed by direct reprogramming (iPSCs) and altered nuclear transfer (ANT).

3. Animals fetal stem cells:

These are fetal stem cells obtained from some animals such as pigs, rabbits and the like.

After detailed discussions of the papers submitted in this seminar about its different topics; the participants agreed upon the following recommendations:

First: There is no legal objection to conducting this research on stem cells to produce body tissues with view to using them in the treatment of some diseases on condition that these cells are obtained from sources permitted by Islamic law.

Second: Fertilized eggs surplus to the requirements of IVF possess no privileged status and enjoy no sanctity before their implantation. It follows that there is no objection to any method of disposing of them. Hence, using them for the purposes of treatment and scientific research is better than wasting them.

Third: It is forbidden to implant a fertilized egg in the uterus of a woman other than its owner. Thus, necessary precautions should be taken to prevent the use of a fertilized egg in conceiving a pregnancy not permitted under Islamic law.

Fourth: it is prohibited to affect an intentional abortion so as to deploy the fetal parts in transplantations. Abortion should be confined to natural unintentional abortion and abortion for legally permitted reasons. It is not lawful to resort to surgery to end the pregnancy except when it is necessary to save the mother's life;

Fifth: If the fetus shows signs of life, medical treatment should be sought to sustain and preserve its life if possible rather than using it for organ transplantation. If the fetus shows no potential for continued life, benefit is not to be derived from it until after its death.

Sixth: it is imperative to be cautious in the use of fetal stem cells in light of the possibility of their rejection by the body of the recipient. This can lead to serious complications. This seminar commends researchers to pursue research in this regard to overcome this serious problem;

Seventh: No kind of coercion or enticements should be used to obtain fertilized eggs.

Eighth: There is no legal objection to benefiting from the blood of the placenta or the umbilical cord. The seminar recommends the pursuit of research aiming at the expansion of the use of blood from the placenta since there are no ethical objections to it. It is imperative to obtain the couple's consent to using it after clarifying the aspects of its use. This should also be performed along with a guarantee that donors are protected against DNA identification;

The seminar also recommends the necessity of expanding the establishment of placental blood banks. Necessary precautions should be heeded on storage. The donors' statements and other procedures should be also taken into consideration;

Ninth: it is not allowed to use primordial tissues of aborted fetuses for sperm production. Similarly, it is prohibited to use their ovaries for producing eggs. This is with the exception of using these eggs and sperms in research to unveil the reasons of male and female infertility or any other relevant problems. This should be stated clearly in the research protocol. Research Ethics Control committee should make sure of all this;

Tenth: the seminar recommends the necessity of conducting a profound study of the topic of the use of chimeras in terms of ethics. This should be done in light of the expansion witnessed in the field of preparations of vaccines, insulin and animal cardiac valves. There is no reason that chimeras should not be used –in this phase- in conducting research in place of human fetuses at least for the present time;

Eleventh: there is no legal objection to obtaining stem cells from adult donors on the condition of obtaining their informed together with the protection of their identity against DNA analysis. They should also not be subjected to any kind of enticement or coercion;

Twelfth: it is lawful to take adult stem cells from an adult person to plant them in the tissue of the same person's organs to produce sperms. This can be beneficial in cases of aspermatism or oligospermia. This also applies to adult female eggs;

Thirteenth: it is completely unlawful for organ implantation processes to be subject to commercial purposes. No financial inducements should be offered by any agency whether the researcher or the firms in charge to entice a husband or wife to obtain an abortion.

Fourteenth: donors should be protected against DNA identification processes that can be performed on the donated stem cells or offspring produced from these human fetal stem cells. This should be stipulated in the authorization signed by the donors and they should consent to it as well;

Fifteenth: stem cells are only to be used in medical fields. They are not to be used for the purposes of plastic surgery which is contrary to divine

law and which alters Allah's creation and tampers with it. Also science is not to be used for evil, corrupt or subversive ends;

Sixteenth: enlightened and informed voluntary consent:

The seminar recommends physicians and researchers to 'ensure the completion of the informed voluntary consent form of the IOMS. notifying the couple of the destination of their fertilized eggs and answering all their questions. These gametes must not be implanted in any other woman and should not be used in profiteering;

Seventeenth: patenting Stem Cells:

Methods of separating stem cells can be patented. Besides, the methods of producing specific therapeutic stem cell lines can be patented.

The seminar highly recommends making these techniques and products accessible to developing countries at affordable prices.

It should be noted that stem cells themselves as well as all their types can not be patented. This is identical to the way that none of the phases of human growth can be patented - including the fetal stages. In the same manner, fetuses cannot be patented if they are to be used for industrial or commercial purposes; for they are creations of Allah;

Eighteenth: policy, equity, priority and ethics:

• **The seminar recommends the following:**

- (a) calling upon developed and developing countries to observe and respect the ethical values approved by each country in light of its customs, traditions, culture and religion; this to take place in the fields of global biomedical technical progress and what underlies that progress, and under the guidance of the Global Islamic Covenant of Medical and Health Ethics issued by the IOMS.
- (b) researchers should heed ethical standards and international guidelines in biomedical fields; especially in the field of stem cells. This is to preserve man's dignity, freedom and the sanctity of his life.
- (c) The seminar urges planners of health policies and health care systems in the developing countries when thinking of national policy to take into account the huge expenses and complicated technicalities of biomedicine in general. They are recommended

to assess the expenses and degree of benefit before providing these techniques. The limited nature of funding these techniques should be also taken into consideration on condition that this should not run counter to equity of distribution and priorities.

- (d) The seminar urges the developing countries to prepare the necessary personnel to benefit from them when the financial circumstances become available.

Nineteenth: animal fetal stem cells and xenotransplantation:

The seminar recommends the following:

- a- Caution should be heeded concerning the use of animal fetal stem cells in xenotransplantation. This can involve many perils by confusing human and animal genes; a confusion that might be reflected in human behaviour.

It should be noted here that the use of treated lifeless tissues or organs like pig's cardiac valves, Insulin and Heparin (blood liquidating substance) does not come under the topic of xenotransplantation.

- b- Caution should be taken 'against the possibility' of 'man' contracting some known or undiscovered animal diseases. This could result in the wide spread of disease within the human community at a global level.
- c- The necessity of obtaining informed and voluntary consent of the patient after providing him with a full explanation of the hazards and benefits to which he may be subjected. Both the physician and the patient should advise relatives and visitors not to be close to the patient during the therapy period and until the medical 'authority' in charge permits it. This is for fear of the hazard of infection. The medical 'personnel' in charge should be strict in this regard.
- d- Xenotransplantation should not be permitted unless under effective national organizational mechanisms of regulation and monitoring supervised by national health institutions. Also, xenotransplantation should only be permitted with an effective technical system to minimize hazards and improve safety and futility.

The twentieth: the seminar confirms the fourth paragraph of the WHO statement issued between 18-20 April 2005 in Geneva which stipulates the following:

There are some practices of xenotransplantation that raise concern. Sperms are injected with the presumption that they will, for instance,

"renew energy" or "fare as therapy". However, these procedures have not yet proved effective for various sets of diseases and illnesses. In these non-regulated practices, many animal cells are used with indifference as to their quality, safety and usefulness. These kinds of practices represent unacceptable general health hazards that result in infection and should not be allowed.

General recommendations:

- 1- the seminar recommends that IOMS in cooperation with WHO should shoulder the responsibility of studying the legal aspects of stem cell therapy to facilitate the mission of legislative bodies in the Muslim countries.
- 2- The seminar recommends that as of necessity Muslim countries form national committees to supervise the conduct of research and therapy in the field of stem cells in order to ensure the full observance of all the Islamic ethical rules. These would be concerned with both national and international standards as well as with detailed monitoring of research by researchers or supervisors of therapy.
- 3- The seminar recommends that the IOMS in co-operation with the WHO issues a code for research and therapy entitled "The Islamic Code of Good Practice for the Use of Human Stem Cells".
- 4- The seminar recommends that the IOMS and WHO lay out a protocol similar to that of "the good practice of industry" to provide suitable accommodation for animals if it is intended to use animal stem cells.
- 5- The seminar recommends the Muslim countries to encourage the establishment of an "Islamic Waqf" to be used in funding scientific research.
- 6- The seminar recommends the necessity of making links between the research centers in Muslim countries through the establishment of a communication network to achieve integration and cooperation and information exchange.
- 7- The seminar recommends that Dr. Abdul Rahman Abdullah Al Awadi- the president of IOMS - send a thank-you telegram to his Excellence the president of the Arab Republic of Egypt, the Prime Minister and the Minister of Health and Housing for agreeing to take this seminar under their auspices. We also recommend extending thanks to his Majesty the Prince of Kuwait, his Heir to the Throne and the Head of the Kuwaiti Cabinet for their support for and care of the IOMS.