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Review Article

Ethical Issues in Magic Cell Therapy

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ABSTRACT

Stem cell therapy, often referred to as "magic cell therapy" boost tissue differentiation, development, and repair and facilitate an interpretation of ageing and organogenesis phenomenon. However, many social, moral and ethical dilemmas arise in context of therapeutic application and biomedical researches involving stem cells. Issues of concern may range from psychological/physiological effects on potential beneficiaries or donors; ethical dilemmas concerning the origin of embryonic stem cells; logistic issues like cost and availability, medical concerns like teratogenic proliferation as well long term general implications on society. Key stake potential challenge lies in distinguishing, defining and justifying 'benchmark' guidelines of therapeutic, prophylactic and non-therapeutic intervention in stem cell therapy. Researchers related to stem cells cultivate a 'lot of tissues', in an almost commercial pattern. Stem cell oriented biomedical techniques like cloning, genetic modification and *in- vitro* fertilization furnish progressive physical creation, maintenance, alteration or repair of humans, without any clear distinction between the natural and the artificial. There is no convergence between 'what is original and what is scoop'. Would perhaps not be an understatement in such a scenario, the 'magic cell' holds the possibility to direct and alter prime personalities, life and life styles.

Keywords: Stem Cell; Magic cell therapy; Ethics

I. INTRODUCTION

The most common way of defining ethical norms is to establish a distinction between the acceptable and the unacceptable. (David B. Resnik, 2010) Bioethics poses some key questions on 'stem cell therapy' in context of basic human values such as rights to life and health, the rightness or wrongness of certain development in health care, life technology, medicine, health profession and society's responsibility for the life and health of its members.(what is bioethics, 2008)

The most critical microethical issue in stem cell research is the availability of stem cells themselves; the human embryo. New discoveries concerning the culturing human stem cells have land to the reopening of an international moral debate. (Suzanne Holland, 2003)

The most common way of defining ethical norms is to conduct distinction between acceptable and unacceptable behavior. One possible explanation of these disagreements is that all people recognize some common ethical norms but different individuals interpret, apply, and balance these norms in different ways in light of their own values and life experiences. Another way of defining 'ethics' focuses on the disciplines that study standards of conduct, such as philosophy, theology, law, psychology, or sociology. (David B. resnik, 2010) Bioethics is a branch of "applied ethics" and requires the expertise of people working in a wide range disciplines including: law, philosophy, theology, medicine, the life sciences, nursing and social science. Bioethics is concerned with questions about basic human values such as the rights to life and health, and the rightness or wrongness of certain developments in healthcare institutions, life technology, medicine, and the health professions and about society's responsibility for the life and health of its member (what is bioethics, 2008). Some patients will inevitably suffer the consequences of an error made during their care or hospitalization. Many people in need of diagnostic tests or surgical procedures are in pressure to wait months, sometimes even the years, to get these facilities. These are just some examples of the types of ethical challenges that patients and their families may confront in the health care setting. Ethical challenges may involve facing the public in health care has been a disagreement between patients/families and health care providers over treatment decisions, facing the public in health care, issues related to access to needed health care services for the aged, chronically ill and mentally ill, shortage of family physicians or primary care teams in both rural and urban settings, facing the public by

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the panel was the issue of medical error, the appropriate use of pain medication in the terminally or chronically ill, and the use of palliative care at the end of life, challenge of obtaining informed consent in the health care setting, family of issues associated with participant involvement in research, challenge of substitute decision making. When a patient is incapable of making a particular health care decision, the health care team will turn to the substitute decision maker to make the decision and surgical innovation. (Jonathan M Breslin, 2005)

Research embryos made for the single objective of research, these may either be produced with donated gametes or they may be produced by embryo splitting or nuclear transfer. The legal situation in many European countries is under development. With regard to embryonic stem cell research, it is thus necessary to refer to the general legislation on embryo research. - In some countries, draft legislation is being prepared to allow research on stem cells derived from supernumerary embryos after *in vitro* fertilization. - In other countries, draft legislation is provided for the possibility of creating embryos by nuclear transfer, for the sole purpose of stem cell research. New discoveries concerning the culturing of human stem cells in 1998 have led to the reopening of the debate. The National Bioethics Advisory Committee (NBAC) issued a report on September 1999; hearings took place in 1999 and 2000 before the competent Committees of the US Congress and finally the Clinton administration13 proposed that, under certain conditions, the funding of research to derive and study human Stem cells be permitted. Risk-benefit appraisal is determinative in stem cell research, as in any research, but is more difficult as the uncertainties are considerable given the gaps in our knowledge. Attempts to minimize the risks and increasing the benefits should include optimizing the strategies for safety (Rafael Capurro, 2009). Most critical micro ethical issue in stem cell research is the availability of the stem cells themselves: the human embryo. These have been obtained in two different ways: one is from germ cells from aborted fetuses and the other is from cells from embryos.

The promising research in stem cell is significant and important. There is the likelihood of using such cells for drug development, toxicity testing, study of developmental processes, learning about gene control, and developing specific cells for use with bone marrow, nerve cells, heart muscle cells, and pancreatic islet cells. Commitment to stem cell research is a commitment to business as usual in the medical community (Thomas A. Shannan, 2004). What if the life that would need to be sacrificed was that of a fetus? May we permit abortion to save the life of a new born baby? Mishnah (Daniel Eisenberg, 2011) states that if the life of a woman in labor is threatened by her fetus, the fetus should be aborted. But once a portion of the baby has emerged, we may not abort the fetus, because "one may not set aside one person's life for the sake of another." The principle behind this ruling is that one may kill someone who is unjustly pursuing a third party to kill him. Since the fetus, which is not yet considered a "complete" person, is "pursuing" the mother in a way that will inevitably result in her death, we may kill it first. But, once it has even partially emerged, it is considered a full-fledged person (Daniel Eisenberg, 2011). Concerning the emotional state, depression levels were higher in women reporting masochistic dreams, while no difference in anxiety levels was found. Labor duration was shorter in the dreamer group and in patients with masochistic dream content. These findings may indicate that, also in pregnancy, the number and the content of dreams are influenced by women's mood and that the evaluation of the oneiric activity might represent a useful tool for clinicians either to investigate the women's emotional state or to predict its repercussions on the course of labor. (Mancuso A, 2008)

There's little difference between a newborn baby and a 32-week-old fetus. A new wave of research suggests that the fetus can feel, dream, even enjoy *The Cat in the Hat.* After nine weeks, the embryo's ballooning brain allows it to bend its body, hiccup, and react to loud sounds. At week ten, it moves its arms, "breathes" amniotic fluid in and out, opens its jaw, and stretches. Before the first trimester is over, it yawns, sucks, and swallows, as well as feels and smells. By the end of the second trimester, it can hear; toward the end of pregnancy, it can see. (Janet A Hopson, 1998) The roots of human behavior, researchers now know, begin to develop early - just weeks after conception, in fact. Well before a woman typically knows she is pregnant, her embryo's brain has already begun to bulge. By five weeks, the organ that looks like a lumpy inchworm has already embarked on the most spectacular feat of human development: the creation of the deeply creased and convoluted cerebral cortex, the part of the brain that will eventually allow the growing person to move, think, speak, plan, and create in a human way.(Janet A Hopson, 1998) In a study of post-abortion patients only 8 weeks after their abortion, researchers found that 44% complained of nervous disorders, 36% had experienced sleep disturbances, 31% had regrets about their decision, and 11% had been prescribed psychotropic medicine by their family doctor.(List of major psychological effect associated with abortion, 2011)

II. Discussion

Research embryos created for the one and only mission of research may either be produced from donated gametes or by live embryo splitting and nuclear transfer. The legal situation in many countries is still in its juvenile stages with regard to embryonic stem cell research. It is thus necessary to refer to the general national legislation on embryo generated cell research. In some countries like Britain, Japan, Israel, Australia, China, Singapore legislation is being drafted to allow

research on stem cells derived from embryonic products of *in-vitro* fertilization. In other countries draft legislation is provided for the possibility of creating embryos by nuclear transfer for the sole purpose of stem cell research. (Leora Dahan, 2003) The national bioethics advisory committee (NABC) between 1999 and 2000, proposed that , under certain conditions, the funding of research to derive and study human stem cells may be permitted. (Leora Dahan, 2003) The stem cell with its vast regenerative potential, is significant and promising for drug development, toxicity testing, developmental morphology, trauma repair, gene control and generation of specific cells of major therapeutic relevance like bone marrow, nerve cells, heart, muscle cells and pancreatic islet cells. As of now, stem cell therapy has an established value in bone marrow transplant for leukemia cures, but researchers are anticipating more diverse applications in a range of conditions like cancer, Parkinson, sclerosis, myopathy and spinal cord injuries. However a matter of practical concern remains the possible teratogenic potential of uninhibited stem cell division in transplant cases. Risk benefit appraisal is determinative in stem cell research, but it is also more difficult due to marked uncertainties arising from gaps in our existing knowledge and intent. For some skeptics involvement to stem cell research is an involvement to business as usual in the medical community. The modernist school of thought claims that embryo is not equivalent to human life. 1/3 of zygotes don't implant (they are wasted any way). Blastocytes are not human, they are just cluster of human cells. Embryos prior to development of heart brain (<54 days) are not alive.

Despite all the supporting verbalism for these, so called 'magic cells' with such a vast benefits that still lurks in the background is "what is a life that would need to be consequentially sacrificed was that of a fetus ". May we permit abortion of an unborn baby to save the life of another new born baby.

Mishna (6) states that if the vitality of a woman in labor is threatened by her fetus, the fetus should be aborted. But ones the portion of baby has emerged, we may not abort it because "one may not lay aside one person's life for the interest of another". Hence, we can well stipulate that the bioethical code of conduct is a precarious jigsaw between what's 'right' and 'apparently right'.

SOME ETHICAL DILIMMAS TO WRESTELE

A person who has lived his/her life to the prime, and is now on death bad, need urgent organ transplantation; may intentionally undergo the procedure as a life saving, ethically justified intervention. However, if such an intervention includes a need for sacrificing a fetus (a mortal that has yet not opened its eye to the meaning of life), Is it morally justified? A lot of factors may affect the answers to this question. These are emotional, phychological, moral, social and religious.

MORAL ISSUES

The deliberate creation and the abolition of a human embryo for stem cell harvesting is the primary source of controversy for prolife supporters.

AUTONOMY ISSUES

Research suggest that the fetus can feel, smell, dream, react to sounds and even enjoy rhymes.(Janet A Hopson, 1998) the root of human behavior begin to arise quite untimely, just weeks after conception. The creation of the cerebral cortex is the most spectacular. Feet of human development which sooner or later allows the developing person to move, think, speak, plan and behavior' in a human way. In such a scenario; is it ethically viable to 'borrow 'a piece of flash (tissue) for research purposes from a 'growing person' without his/her active and direct content?

EMOTIONAL / PSYCHOLOGICAL ISSUE

Scientific study states that when a woman is pregnant, there is an emotional relationship between the developing fetus and the mother. Can humanity charter such a sacrifices; as this is not only the sacrifices of one yet unborn mortal, but also the forfeit of a mother's emotions, dreams, love and affection. The question that naturally arises is, "how permissible is it to cure one person at the cost of two"? The whole concept seems not only unethical; but also illogical. Also, the donor mothers emotional state after an elative 'induced' abortion is prone to depression, regret, anxiety, worthlessness, guilt etc.(Mancuso A, 2008) In deliberately and electively sacrificing an embryo for generating stem cells, are we exclusively harvesting a 'piece of meat' or are we deleting the psychology of two alive human beings?

RELIGIOUS ISSUE

Do benefits of healing the ill outweigh the negatives of destroying human embryos? Religious dictate varying perspectives.

Hinduism and Buddhism teaches: "Conception is the beginning of a soul's rebirth from a previous life."(Lori P. Knowles, 2000) Hindus reject the use of embryonic stem cells as Christians do. This also includes obtaining stem cells from aborted fetuses.

Islam teaches: Key excerpts appear in the Quran (the Islamic holy book) regarding the origin of life. *"Each of you possesses his own formation within his mother's womb, first as a drop of matter for forty days, then as a blood clot for forty days, then as a blob for forty days, and then the angel is sent to breathe life into him* (Weckerly Michale, 2006).This statement from the Quran are construing to explain that an fetus is not a human life until after 120 days of gestation hence it is not an infringement of Islamic law to use fetus in stem cell research before the 'critical 120 days' period.

Christian-ism teaches: In addition, there is no official position of the United Church on the status of the embryo. "*That is not to say that we have no opinion or do not care about their rightful status before God. But officially, we have never declared that we regard embryos as persons. Some of our members would agree with that delectation; many – perhaps most would not agree, believing instead that embryos have an important but lesser status*." (Lori P. Knowles, 2000)

Judaism teaches: Orthodox Jews believe that embryos do not have the same moral status as human persons. *Under Jewish law (Halcha) the fetus does not become a person (nefesh) until the head emerges from the womb. When the embryo is implanted it is "as water" up to the fortieth day. After that time and before the fetus emerges from the woman's body it is a potential life and has great value.* (Lori P. Knowles, 2000)

Stem cell research fuels futuristic notion like eternal life, a temporal, existing beyond the physical barriers of age and ageing, an inexhaustible array of "ready to use organs", even duplicate or surrogate individuals and ultimately the extent up to which the 'stem cell revolution will reflect on the homosapien population and civilization.

III. CONCLUSION

The possibilities of magic cell therapy are unending and this concept inspires hopes as well as fears. Scientists, through the 'magic cell' dream of recreating the human being. Ultimately it is up to us whether to stand by the "magic cell" or to warn ourselves of the likely disasters and moral dilemmas that it may lead to indisputably cell based therapy' holds the potential to alleviate many major diseases faced by man and to translate into a better quality of life for the human being. Creating a judicious bioethical balance may yet be possible, by clearly defining the boundary between scientific utilization and commercial exploitation. Such in the perceptions of key stakeholders as well as priority populations. A natural approach would by any chance , to artifices more ways for the application of uncontroversial progenitors like amniotic fluid stem cells, umbilical cord blood stem cells, adult stem cells, induced pluripotent cells and *in-vitro* prone vegetative cell linings that can recourse to an 'embryonic state' without involving any form of injurious feticides. Also surplus/unused embryos created in infertility treatment clinics could be donated for stem cell research and techniques which optimized for manifold reuse of the 'source embryo' could further limit the destruction of human embryos. Such a scenario would incur no loss on either the donor or the recipient. Socially and ethically, it would be more justifiable and human.

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